Appendix C – 30 Day Comments and Responses

Public Scoping Responses Received During the 30-Day Notice and Comment Period

Table 1: Members of Public Who Responded During 30-Day Comment Period May 28th through June 27th, 2019

Letter #	Name	Letter #	Name	Letter #	Name
4	Andrea & Gerald Vigue	7	Ann Adamovich	18	Bud & Pat Mohns
27	Chuck Hill	33	Dick Artley	34	Donald R. Behm
45	WCFA (WI County Forest Association): Gary Zimmer; Norman Bickford	48	GLTPA (Great Lakes Timber Professionals Association): Henry Schienebeck; Gary Zimmer	75	Kay & Otto Scharpf
81	BFLA (Butternut-Franklin Lakes Association): Mary Doden	103	Rudolph Fuys	106	Steven Hodgdon
113	FSFC (Federal Sustainable Forest Committee): Tom Tallier; David Ziolkowski; Gary Zimmer	125	Justin Vickers, ELPC	126	Kathleen & Michael Klinnert
127	Forest County LCC: Al Murray	128	Dave Zaber	129	Gary Zimmer
130	Katharine Lippencott	131	Mark Leach	132	David Anhalt

Responses to the 30-day comment period were received from 21 individuals and/or organizations. All were reviewed by the Responsible Official and resource specialists who responded to them. More information was sent to those who requested it. Comments which pertained to the Fourmile project have been copied or paraphrased below, with similar comments grouped.

Table 2: Comments & Questions from the Public and Forest Service Responses

Letter #	Public Comments & Questions	Team Responses & Comments
75, Scharpf, Kay & Otto	Please send me detailed maps of the sale showing the specific vegetative prescriptions. Once again this is important and should be included in your original attachments. In addition to my comments below, may I say that maps with specific management prescriptions make it lots easier for the average lay person to comment. Who is going to read the entire 39 pages to comment! 1.a. Why did the vegetative management for the 008-2 aspen stand change from thinning to clear cut? 1.b. How many acres is this stand? 2. Will the salvage of spruce in 008-3 and 008-4 allow for the intermixed maples and pine to remain? 3. Does 224-17 hardwood selection include the Hidden Lakes wildflower patch that I pointed out? It is hard to see on the map.	1.a. Thank you for catching this inadvertent error and bringing it to our attention. The proposal for this unit is still a thinning. The coding for this unit will be changed back to a thinning. 1.b. Stand 008-2 is 99 acres. 2. The salvage cuts would only remove dead/ dying trees from the stand to make room for regeneration. Some other trees may need to be removed for access into and around the unit, or to potentially open up more light to the ground for regeneration purposes. The maple and pine are not designated from removal, as long as they are healthy and do not impede regeneration or logging practices. 3. Yes, the Hidden Lakes wildflower patch is included in 224-17. Unit 224-17 would be winter logged (frozen ground conditions only) because it is in Management area 2B. Due to the design feature of winter logging only and the stand treatments, the wildflower patch should not be overly impacted.
75	After follow-up by the USFS from previous comment, commenter states they still stand firm on: 1. A 40 acre limit on clear cutting. The stands in EA-2 are not mature. Break up large stands to diversify age classes. Cut ½ now and ½ later. Required aspen acreage can be achieved by many small dispersed cuts not a few large ones.	1. In the Fourmile proposed project area, being able to treat and move as many acres of aspen stands to Forest Plan desired conditions is connected to the purpose and need of the CNNF 2004 Land and Resource Management Plan ("Forest Plan"). Promoting healthy and resilient forests which is tied to the rationale for exceeding 40 acres is connected to the project purpose and need (Forest Plan Goal 1.4). A portion of the vegetation section of the EA discusses exceeding 40 acres and the no action alternative. Approval was granted from the Regional Forester for the creation of openings exceeding 40 acres in March 2020.

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	Follow Federal and Forest Plan Guidelines. 2. When hiring a logger, write required specifications for logging procedures to perhaps employ a quality logging company. 3. Require Forest Service supervision of tree marking and cutting. 4. [They] will be monitoring the wildflower area (224-17) for flower maintenance on the Hidden Lakes Trail during the years following the harvest. 5. Commenter also stated that they "…trust that the scenic integrity of this plan will insure that this part of the Northwoods continues to be one of Wisconsin's most beautiful and popular recreation areas".	Specifically, there are eight aspen or mixed aspen, paper birch, and balsam fir stands that would be combined to create harvest units greater than 40 acres in size. To ensure the Forest Service minimizes forest fragmentation (maintain forest connectivity) and still resolves the issue of forest resiliency in the Fourmile project area, it is necessary to avoid many smaller cuts and instead create temporary openings that exceed 40 acres in certain areas. If we do not clearcut we will lose many of our early successional species and the habitat they provide. Species such as Quaking Aspen, Big-tooth Aspen, Paper Birch, and Balsam Fir are fast growing, short lived species that inhabit sites after disturbances. Therefore, the optimum method for regenerating these species is short rotation clearcutting (Perala, 1990, p.561); please see page 14- 15 of vegetation specialist report for further rationale. Not only are clearcuts beneficial to early successional tree species, they are also beneficial to certain wildlife species (please see Biological Evaluation report). If the Forest Service were not able to deviate from the 40-acre guideline, these large clearcuts would be sub-divided by approximately 10-acre leave areas or aspen shelterwoods (underplanting white pine for regeneration). This action would result in more acreage being impacted and would add up to approximately 60 acres. Unfortunately, our office is unsure on the EA-2 non-mature designation they are referencing. 2. All loggers that put in bids to implement tree harvests have to be in good standing with the Forest Service's contracting guidelines. In addition, implementation has design criteria or mitigating activities loggers need to follow.

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		3. District Check Cruiser, Contracting Officer's Representative, and/or the CNNF silviculturist all work together to make sure the intent of the prescriptions are implemented on the ground. The timber sale administration team is also required to monitor and inspect all aspects of the sale operations to make sure all contact provisions are being followed. In addition, checklists are used to make sure design features from the NEPA document have been used during sale layout and preparation. 4. Public involvement is always welcomed by the USFS, we would be glad to receive any information and/or feedback to ensure we better understand possible impacts to the forest and local community. 5. Chapter 3, Section 3.3 of the Environment Assessment summarizes the analysis of the proposed action on the visual and scenic resource.
4, Vigue, Andrea & Gerald	Commenters own one of the 3 large private properties to the west of their access route which comes off of FR 2207 and FR 2207B. • They are worried about the road being worse or machinery blocking access to their properties, especially in the summer. They are only here in the summer because they live in IL, but others live in WI. Will the units around this area be logged and hauled in the winter or summer? • These homeowners have helped to pay and maintain the road into their places, paid for gravel and spreading, fixing potholes. Sometimes the road gets pretty bad. Andrea rented a vehicle earlier this year to be able to get in to their property.	No harvest units are adjacent to the commenters' property. Most of FR 2207B does not have harvest scheduled adjacent to it. Most harvest units adjacent to other private properties to the west and north of FR 2207B are thinnings, which may take place in winter or summer. Based on maps and discussions with private landowners, it appears that some landowners have been and are using and maintaining unofficial "roads" or "road segments" to access their private properties. Part of the access route they use is FR 2207B, which is a road that is open to the public. It is OML 2 (Operational Maintenance Level 2), which means roads are open to public or administrative use, but require a high clearance four-wheel drive vehicle and may have seasonal restrictions. FR 2207B ends on NFS land before reaching the private land boundary. The segments listed below tie FR 2207B to private parcels. Road segments 6164501,

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	• When nearby logging was done a couple years ago, they did a good job with the selective harvest. • These roads have been used since 1938. Homeowners have been working with FS to keep these roads in good condition in the past. The last timber harvest left the road in not so good condition. • Make sure the implementation folks know not to block their only access into their properties.	616450, 616433, and 616435 are proposed for decommissioning. None of these segments are officially roads. Portions of two or more of these segments are used by landowners to access their private properties. Road access and improvements by private landowners on National Forest System land, including road maintenance, requires coordination with the Forest Service and a SUP (Special Use Permit) from the Forest Service. A couple years ago, one of the private landowners spoke with the Forest Service about forming a road association and getting a Special Use Permit (SUP) for the road segments used, but it was not pursued by the landowners at that time. Implementation of these road decommissioning projects could be delayed while the landowners work with the Forest Service to obtain SUPs. It would be most efficient if the landowners who use any of those segments were to coordinate in a single SUP application for a single route into their private parcels. However, as of early 2020 no SUP has been received by the CNNF in regards to this issue.
7, Adamovich, Ann	"I am writing in reference to Map 1 (northern part) of the Fourmile Project in the Chequamegon-Nicolet National Forest I have been coming up to Franklin Lake sine [sic] 1069 [sic] and living in the area for 37 years - my husband was born in Eagle River. Thank you for this comment period and listening to our previous comments. I'm so excited that Area 007-20 has been removed! The point on Franklin Lake is small and beautiful. Thank you also for taking care of the Hidden Lakes Trail with SIO resources, leaving a denser basal area along the	Thank you for your responses, we are glad we were able to address your concerns. If a company's bid is selected the company is required to implement the mitigation measures described for their contracted stands. The Forest Service follows the Forest Service Handbook, the Silviculturists stand prescriptions, and other specialist mitigation requirements when deciding on mitigation measures.

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	trail. This will also be nice on McClane Lane (2488) where the select cut will be on both sides of the road. My husband is on the WI State Board which created the Forestry BMP for water quality and we are glad to see that these will be implemented in the Project. Lastly, I would like to encourage you to use Master Loggers in the higher traffic areas. Master Loggers are held to higher standards and are required to be above the criteria. Thank you for taking the time to read these comments on an area near and dear to my heart!"	
48, GLTPA	"…GLTPA supports the Proposed Action and the 45.8 MMBF of harvest identified. Unfortunately, this assessment does not include any type of socioeconomic analysis that would further highlight the many benefits of the selection of the Proposed Action to the forest industry, area tourism and most importantly to the local communities (Purpose B of this action). Other recent assessments on the Forest (ie. Black Torch) have illustrated the huge net value in dollars and jobs generated by implementing the Proposed Action. This along with the benefits of having a healthier forest is a clear choice when compared to the No Action Alternative. We also support the management efforts outlined in the Modified Proposed Action to target the high amount of aspen, balsam fir and paper birch that is beyond normal rotation age in the Project Area. It is unfortunate that this needed management effort was delayed for so long. GLTPA acknowledges the time and effort taken by your staff in planning and analyzing these Proposed Activities.	Alternative 2 would produce approximately $4 million with roughly $586,000 returning to local governments to be used in Lieu of paying taxes. See the Economic Specialist Report for more details on this. Thank you for acknowledging our attempts to comply with CEQ regulations for the reduction of paperwork associated with this NEPA analysis. The amount of attention devoted to a given impact increases with the complexity of the proposal and the potential for significance. Impacts shall be discussed in proportion to their significance (40 CFR 1502.2[b]) and NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1).

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	While we are requesting a bit more economic information included in this document to benefit both the decision maker and the public, we do appreciate the overall reduction of paperwork associated with this NEPA analysis in compliance with the new CEQ regulation provision. The Forest Plan process extensively evaluated the impacts of all typical forest management activities and there is little need to reinvent the wheel. The implementation of sound proven forest management activities have occurred for decades on the Forest and under other public land ownerships in close proximity to this project area with minimal adverse impacts…"	
18, Mohns, Bud & Pat	"I am very much opposed to the controlled burn idea in the 4 mile project! We have not had incidence of forest fires since 1976 when we bought our cabin. We had a great deal of trouble finding house insurance at that time and it has been very expensive since then. We do not want that situation again! We all know what forest fires do when they cannot be controlled.....which seems to happen often. We do not have forest fire personnel in the northwoods. Let us not practice on our beautiful Nicolet....known for the beautiful forest nationwide!" Commenter is a property owner on Franklin Lake and is concerned about the proposed Rx burn and also requested a follow-up conversation with a CNNF representative.	Thank you for your comments. Prescribed burning can be an important tool in our tool-kit for managing our National Forests. In the right sites, prescribed fire can restore resiliency and diversity to ecosystems while also making our communities safe from catastrophic fires in areas where there is potential for wildfires. The Fourmile project has several areas where we can accomplish those goals safely. The prescribed burning for this project will take place south of Sevenmile Lake (see "restoration/restoration thin" treatments in the map packet). Planning and implementing a prescribed burn goes through a rigorous review process. First, fire and fuel management professionals, who meet national standards based on their years of experience and training, evaluate in detail the specific area to be treated. This evaluation may include multiple field visits to the site and measurements of site conditions such as existing fuels and vegetation, slope, aspect, and other site factors such as roads, trails, and water features that could be used as primary and secondary containment lines. After our field review, our fire and fuels staff write a prescribed fire and fuels management plan which adheres to national standards and policies. Once written,

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		the plan is reviewed by the Forest's fire program, then reviewed by other resource specialists such as a Wildlife Biologist and Silviculturist. Further, the proposed fire plan specifies conditions which need to be met in order for the burn to take place. These parameters include: the number and types of firefighters needed to accomplish the burn, potential natural resources concerns to mitigate, weather conditions (e.g. ranges of wind speeds, relative humidity, etc.), fuel moistures, and the need for local notification of local agencies and private landowners. If/once the plan is approved by the Agency Administrator (typically the local District Ranger), the weather is monitored for upcoming opportunities that fit the conditions of the plan. When a window of opportunity is nearing, another check-in and review are done between the "burn boss" (USFS fire professional in charge of burn) and the District Ranger the day of or the day before the prescribed burn. After the burn is implemented, we evaluate the effects and use that information to improve our efforts the next time we burn at that site or at another location. Over time, we have used that process to develop a wealth of experience, which we bring to bear on every prescribed fire we plan. The Chequamegon-Nicolet National Forest (CNNF), and by extension the Northwoods, has many employees and equipment to respond to wildfires and conduct prescribed burning. The fire organization for the Nicolet (east) side of the Forest has 11 primary personnel, 4 fire engines, and a tractor plow bulldozer. This department supports wildfires and conducts prescribed burning on the CNNF as well as across the Nation- the CNNF routinely sends out fire crews to assist in wildfires out west when not needed at the CNNF. Additionally, beyond the 11 primary fire personnel, there are over 40 collateral duty employees from

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		other programs on the Forest that are certified to fight fires when additional hands are needed. In total, these 51 Forest Service employees assist in wildfire suppression and prescribed burning. Historically, fire was a frequent occurrence in the forests within the Fourmile project area. One of the reasons prescribed burns are proposed is due to the levels of easily burnable materials ("fuels") in the project area and the wildfire risk this poses. The fire history maps in our project file show wildfires in the Fourmile project area between 1985-2013. 25 separate wildfires have been documented around Sevenmile and Ninemile lake areas. Additionally, pine stumps with fire scars dot the landscape in the Fourmile project area and have been dated back to the mid-1600s and provide evidence that fires occurred every 5-15 years on average. We believe by reintroducing fire in the right locations, we can not only reduce the risk of having large wildfires, but also make our Forests be more resilient and diverse. The commenter was contacted and spoke with the District Ranger to discuss their concerns. Further follow-up meetings may take place at the request of the commenter and discretion of the District Ranger.
113, FSFC	"The Federal Sustainable Forest Committee (FSFC) appreciates the opportunity to provide comments on the Draft Environmental Assessment (EA) for the Fourmile Project on the Eagle River/Florence Ranger District… Our Committee strongly supports the selection of Alternative 2 to implement this project. The documentation provided by the analysis team shows that this alternative significantly addresses the five identified Purposes for this project. The implementation of this alternative would harvest 12,100 acres of timber and	Thank you for your comment. Out of the 147.2 miles of road decommissioning approximately 146.9 miles are already closed to public access. Also, many of the transportation changes are mirroring the access displayed on the 2018 Motorized Vehicle Use Map (MVUM); in other words, the map designated access wouldn't change much, but the on-the-ground conditions would be altered to reflect what the public map displays. Further in-depth information can be found in the Travel Analysis report in the project record.

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	generate an estimated 45.8 MMBF, a total of significant value to our local communities that rely on the sound management of our area forests to provide jobs, support for our schools and local infrastructure as well as maintaining healthy forests. We do have some apprehension on the high amount of road closures (50.7 miles), roads being decommissioned (147 miles) and roads being converted to trail (48.9 miles) under this Alternative in the project area. Some of our members have expressed concern that at least some of these roads not be eliminated as they could be utilized for future timber harvests or used by the general public to access the area. With designated wilderness areas in close proximity there are already a limited number of roads providing recreational access opportunities in this portion of the Forest. We recommend careful consideration be given to ensuring that you balance the amount of public access allowed in the area with resource and management concerns and yet allow as much public access as possible especially in areas with historic use. We acknowledge the amount of work by you and your staff on this project and look forward to its implementation."	
45, WCFA	"Wisconsin County Forests Association (WCFA) appreciates the opportunity to comment on the draft Environmental Assessment (EA) for the Fourmile Project on the Eagle River/Florence Ranger District... In general, WCFA supports the Proposed Action (Alternative 2) for implementation. The documentation provided by your team clearly demonstrates that the overall project addresses its identified Purpose and Need	Thank you for your support. The vegetation section of the EA discusses the lack of early successional forests, the Fourmile project proposes clearcut/coppice treatments on 1,190 acres. Species such as Quaking Aspen, Big-tooth Aspen, Paper Birch, and Balsam Fir are fast growing, short lived species that inhabit sites after disturbances and will benefit from these clearcut areas. Occupying only 472 acres, Paper Birch is not an abundant species within the Fourmile Project Area. Nonetheless, the Forest Plan

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	and follows the direction put forth in the 2004 Chequamegon/Nicolet National Forest (CNNF) Plan. We support the proposed treatments as listed in overstocked conifer, northern hardwood, and oak stands to improve forest health and productivity. Northern Wisconsin is an optimum location for growing trees with an industry in place to properly harvest and utilize this renewable resource. We remain concerned with the continued loss of early successional forest species as a result of these proposed management activities, especially the 29% anticipated decline in paper birch (Table EA-6) in the project area. The draft EA does not contain information if this projected decline is still within the desired Forest Plan range for this species. The loss of paper birch is a regional concern that should be addressed immediately. Every opportunity to maintain this birch component should be considered. We continue to support efforts to regenerate early successional aspen communities even if it means exceeding the general 40 acre harvest unit limitations. We encourage the regeneration of all over-mature aspen stands that most likely will not persist until the next projected harvest. While it is desirable to have well-balanced age classes across the CNNF to meet timber and wildlife objectives, in this instance, we do see the need to harvest what you can, when you can. If sound silvicultural practices had followed a reasonable entry schedule the need to exceed general acreage limitations may not have been necessary in many, if not all, of the stands identified. We are encouraged the Proposed Action will significantly improve the disparity in age class	gives direction (p. 2-6) to manage the Forest's paper birch resource with 25% in each of the age classes as shown in Table 2. Within the project area, 98% of the paper birch is presently between 66 and 102 years of age. This is beyond the standard rotation age and is approaching the extended rotation age given in the Forest Plan (p. 2-4). The intent to harvest Paper Birch is to address the age issue and to open up areas to facilitate growth of an early successional forest so Paper Birch can regenerate and is not lost completely from the project area. Even though an analysis of the no action is not required in an environmental assessment, the Forest Service often will analyze and supply information on if actions are not taken. The no action is often truly represented in the purpose and need for the proposed project. The results of taking no action in Fourmile is described in numerous locations throughout the document and does include the qualitative description of "the cost" of not taking action including individual resource analysis sections of Chapter 3. For example, with no action, the general health of federal lands within the project would continue to decline, increasing the wildland fire risk as the fuel loading would continue to increase with the accumulation of ground and surface fuels on the forest floor and the increased availability of ladder fuels in the form of seedlings and saplings.

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	distribution of young forest species within the Project Area. One item that needs further emphasis in this analysis is a comparison of the impacts of selecting the No Action Alternative. Though Table EA-5 shows that while the No Action Alternative will result in no harvest treatments there is a much greater cost of doing "nothing" and this should be discussed more fully. With the majority of existing early successional stands (aspen, paper birch, etc.) in the Project Area already well over the normal rotation age the ability of many of these stands to regenerate to adequate stocking levels may have already become compromised. Any further delay, even by a few years, could lead to insufficient stocking levels and a significant change in early successional species composition in the project area as well as across the Forest…"	
27, Hill, Chuck	"I would first like to comment on letter number 54 in the Appendix C–Public Scoping & Responses. This is a request to allow a one mile buffer zone in the area of the Hidden Lakes Trail. This is an unreasonable request and makes no sense. The trail area should be treated as the other areas with the removable of dead or diseased trees to assist with the longevity of the trail. As a volunteer I spend many hours each year in cutting and removing tree falls on the trail. Normally there are between 40 and 100 tree falls requiring removal in a year. It would be a joy to see the advanced removal of trees which would appear to have the potential of falling on or in the area of the trail. The Hidden Lakes Trail is a gem and receives much usage during all seasons by hikers, mountain bikers, and winter recreation users. Many groups come from nearby and far locations to enjoy the trail. It is not clear from the Proposed	Thank you for your help in maintaining the trail and your interest in forest management in this area. The one-mile buffer alternative requested by another commenter was an alternative considered but eliminated from further detail. Please see section 2.4.1 in the EA for more information. In addition, at this time, utilizing Hidden Lakes Trail as a haul route or skidding is not planned, although the trail might be crossed by equipment. Trails may be used for skidding as appropriate when other access routes are not available or would cause more resource damage.

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	Transportation Activities Map 1 that segments of the trail are not planned to be used by logging equipment for transportation or cutting activities but it is important that this be avoided. Previous logging activity in the trail area shows that such use of the trail opens it resulting in vegetation growth and obscuring of the trail tread."	
27, Hill, Chuck	The attached map shows the Hidden Lakes trail on the transportation activities map. It would appear that it would be convenient for trucks to use the trail for transportation needs. These segments are previous roads and now have mostly narrowed down with a single track trail tread.	Thank you for your suggestion. At this time, utilizing Hidden Lakes Trail as a haul route or skidding is not planned, although the trail might be crossed by equipment. Trails may be used for skidding as appropriate when other access routes are not available or would cause more resource damage.
34, Behm, Donald	"I am a property owner on the west boundary of the Chequamegon-Nicolet National Forest in Vilas County and previously requested to be kept informed of the Fourmile Project… I have a few questions, not comments, on the project plan. 1. Why is activity #001-8 in a white pine stand described as a sanitation harvest, rather than thinning, on the scoping document/spreadsheet listing vegetation activities? Is this description in response to wind damage, insect damage or disease? 2. What is the approximate distance between State Highway 70 and site marked as activity #001-34? This appears to be located along Forest Lane and adjacent to our property. 3. What is elevation of site marked activity #001-17 in a white pine stand? What measures will be taken to prevent soil runoff and other pollutants from flowing from this site at time of cutting into springs and spring ponds at headwaters of Spring Meadow Creek? Those	1) Recently, it was discovered that red pine in the area are experiencing some disease issues. The diseases seem to be hitting mainly the mature (10-14"+ dbh) red pine in plantation style settings. We propose a sanitation harvest to remove diseased, dead, dying, trees from the stand. The amount of timber removed will depend on the condition of the stand at the time of harvest. A Certified Silviculturist will visit all sites to look thoroughly at the stands so that more detailed decisions can be made about exactly what would occur in that stand before any treatment is conducted. 2) It is approximately ½ mile from HWY 70 and is located on Forest Lane. 3) The slope in this stand ranges from 6 to 15%; elevation is approximately 1,700'. We follow Wisconsin's Best Management Practices for Water Quality. These are sets of rules that make sure we do not harm any waterbody's integrity (whether that be from soils, pollutants, or coarse woody debris from logging practices). Based on how far this stand is away from Spring Meadow Creek, the slope in the area, and the proposed action of thinning, mitigation measure would be adhered to ensure no impact on the

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	springs and spring ponds are shown on both "proposed vegetation activities" and "preliminary proposed vegetation activities" maps. 4. What is elevation of site marked activity #001-36 in a white pine stand along Spring Meadow Creek? This appears to be located along a ridge east of a dam on the creek. There is a steep slope on south and east sides of the ridge…What measures will be taken to prevent soil runoff and other pollutants from flowing from this site at time of cutting into the creek? Spring Meadow Creek is a cold water trout stream and Paul Strong is working with the Town of Washington to remove the small dam on the creek at the south dead end of Spring Meadow Road, on the western boundary of the forest. I fully support dam removal. I appreciate your time in responding to these questions."	creek or surrounding ponds. If slope in the white pine stand occurs over a certain percent, no logging will be done in that section. 4) The stand in question was dropped after scoping due to slope and amount of treatable area. Slope within this stand varies between 15-35%. Spring Meadow Creek is a cold-water trout stream and we are working with the Town of Washington to remove the small dam on the creek at the south dead end of Spring Meadow Road, on the western boundary of the forest. This dam removal is not part of this project.
106, Hodgdon, Steve	Harvest Unit 007-2, designated as oak, is adjacent to Forest Pond CG. Concerned about harvesting taking place during the camping season and disturbing his campers. Wondering when – what year & season – that unit would be harvested.	Compartment 2007, Stand 2 (007-2) is 4.59 acres and is MA 2B with a prescribed selection harvest and Canopy Gaps reforestation, it follows the standards and guidelines: S1, G37, G50, G55, G95, G96, G142, G143, D16, D17 (Appendix A). Based on the G37 designation, harvesting or pruning in the red oak group is limited to the period between October 1 and April 15 to reduce risk of oak wilt infections (Appendix B). See Appendix B for further information on the provided codes At this time, we do not know the exact year a specific stand will be harvested. If a Finding of No Significant Impact (FONSI) is issued for the proposed Fourmile project then the CNNF timber sale program will develop a plan and timeline for timber sale implementation.

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129, Zimmer, Gary	A question about finding responses to previous comments.	Appendix C was temporarily removed from the web to remove some PII (Personally Identifiable Information, like phone number, e-mail or mail address, or other personal information). The updated version is now filed on the web.
128, Zaber, David	Request for additional info.	The draft BE was sent on August 7, 2019.
127, Murray, Al, Forest County LLC	Can you provide me some reference to the location of data related to economic impacts that were assessed as part of the EA? I cannot find data related to economic impacts anywhere in the EA. Of particular concern is the reduction in forest access proposed by permanent closure and decommissioning of 50.7 miles of "unauthorized roads" which were apparently used by the public with motorized vehicles. Additional concern includes 48.9 miles of road converted to trail and 147.2 miles of road decommissioning and how that reduction in forest access will likely impact future forest use and the tourism economic base of Forest County. In my experience, the roads or trails in that area were part of past road inventories and have now likely not been utilized because of wind events that precluded use and from inactivity of logging events that historically provided regular improvements to the roads and then allowed public use. With this in mind, is there GIS data available as to what "roads" will be decommissioned or removed from motor vehicle use so that I could share that information with the public from my end?	Economic information and data sources are available in the Economic Report in the project record. The report was sent to the commenter on sent August 7, 2019. Out of the 147.2 miles of road decommissioning approximately 146.9 miles are already closed to public access. Also, many of the transportation changes are mirroring the access displayed on the 2018 Motorized Vehicle Use Map (MVUM). In other words, the map designated access wouldn't change much, but the on-the-ground conditions would be altered to reflect what the public map displays. Further in-depth information can be found in the Travel Analysis report in the project record. The Transportation Analysis and GIS layer of information was sent to the commenter on August 7, 2019.

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126, Klinnert, Kathleen & Michael	"As longtime summer residents of Butternut Lake in Forest County we are concerned with the Fourmile logging proposal. We have a vested interest, financially and emotionally, into the maintenance of and the integrity of the area. We want to strongly reiterate the points made in the Butternut Franklin Lakes Association letter of June 14th. Recently, there has been much local news coverage regarding the tourism industry in Eagle River and the surrounding area. Camping, hiking, skiing, fishing, snowmobiling and just general enjoyment of the beauty of the area are draws for the tourism industry bringing in a great deal of money to support local establishments and, in turn, the livelihoods provided by those establishments to the residents. We believe this is as important as the logging as far as bringing in the necessary funds to support the citizenry of this area. For these reasons we are requesting that, while logging, setbacks from roads, trails, and sensitive areas of the forest(old growth, animal dens, etc.)be maintained. We appreciate the opportunity to give our input and hope that it is viewed as a respectful request to the forestry department to help keep the beauty and recreational activities available in this area to be enjoyed by all while acknowledging the mandates of the logging industry."	Thank you for your comment. The Fourmile project is proposed to maintain and manage vegetation communities to their desired conditions as described in the 2004 Chequamegon-Nicolet Forest Land and Resource Management Plan. This project will also maintain or enhance existing forest research studies; contribute toward satisfying demand for wood products; provide a safe and effective road system; increase public safety related to wildfire potential; and maintain or enhance recreation experiences. The CNNF follows the Forest Plan Standards and Guidelines (including for areas of High Scenic Value), the 2004 Forest Plan and, the Wisconsin Best Management Practices (BMP) when designing and implementing vegetation projects. Harvest stands along high scenic integrity roads would be designed to minimize the evidence of forest management activities by limiting temporary openings a minimum distance of 200 feet from the roads edge. Selective harvesting techniques may still be used within 200 feet of the roads edge; however, the harvest would be designed to minimize the evidence of forest management. In limited circumstances, a harvesting technique may result in a temporary opening adjacent to the corridor and/or within the 200-foot buffer. However, this would only be the case when mitigating safety concerns or the stands' health and/or natural life cycle is at a point which would result in a natural opening on the landscape, e.g. dead/dying stands or tree species susceptible to wind throw. Possible impacts to recreation, vegetation, wildlife, and roads in the proposed Fourmile project area will be summarized in Chapter 3 of the EA; full reports of each resource can be found in the project record.

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132, Anhalt, David; 103, Fuys, Rudy	We have a cabin accessed by 2207B and hunt the areas around it including the proposed decommissioned fire trails. Per your request I printed, hi-lited and scanned the LIDAR property access map. This is the route used by the property owners. The marked pdf is "img028". Thanks for addressing the decommissioned road questions. In reading through your question responses it sparked another question regarding 2207B's road condition and restoration. As stated the "road will be restored to a condition equal or better than prior to logging". Is the road condition evaluated prior to the commencement of logging in order to insure proper restoration? We as property owners concern comes from the previous logging two years prior where the road was left in a lesser condition. While the road is rated as "four wheel drive passible" 2207B has been smooth, well drained, two wheel passible spring, summer and fall. Lastly Is there a timetable of when we might expect logging to begin and commence in our area? We appreciate your help and understanding with the questions. Road 2207B. It goes from Old Military Road to his property on Lone Stone Lake. FR 2207B through the NF is the only access for him and his neighbors. They have been here since the 1930s. The area was just logged a few years ago. The road was left in pretty bad condition then.	Two maps were sent to the commenter showing roads and property access around FR 2207B. • "FR2207B_PropertyAccess_061219.pdf" from LIDAR shows some additional roads that show up on LIDAR and aerial photos that don't show up on the project area map attached. • "FR 2207B Enlarged Map.pdf" is an enlargement of the Fourmile project area map (Map 2 Transportation) that shows FR 2207B and surrounding roads. Road conditions are evaluated prior to any work being done on them, including any work done prior to use and after use for logging. When an area is actually logged depends on many factors, including: when the sale is sold; seasonal restrictions on harvesting; other activities and events on the Forest; budgets; priorities; etc. FR 2207B will be used for access for sale preparation crews prior to harvest. During harvest, the road will be used for logging contractors to move equipment in and out and for timber haul. At this time, we do not know the exact year a specific stand will be harvested. If a Finding of No Significant Impact (FONSI) is issued for the proposed Fourmile project then the CNNF timber sale program will develop a plan and timeline for timber sale implementation. The road will see use from ranging pickup trucks to semi-trucks and heavy equipment. An increase in activity and noise can be expected while sales are active and timber is being cut and hauled and equipment being moved. We understand there has been confusion related to the condition of this road after harvest activities are concluded. Our intent is to manage and maintain this road at least as an ML 2 road. This

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	What will FR 2207B be used for during the project? What impact will implementation of Fourmile have to FR 2207B? What condition will the road [FR 2207B] be in after the timber sales are done? What work will be done on the road in conjunction with this project? I noticed on the proposed road action map that there are many roads being decommissioned. In particular there are several fire roads connecting to USFR 2207B. What is done to the road when decommissioned? Will it [the road segments to be decommissioned] still be a walkable trail?	means the road is open to the public and is passable by four-wheel drive vehicles. We believe, upon review of its current condition, the road currently meets ML 2 standards. If private landowners or members of the public wish to maintain the road to a higher standard, the process would be for individuals or a group to approach the Forest Service and apply for a special use permit. FR 2207B can expect to have surface maintenance completed on it in conjunction with the timber sales. The surface will be restored to pre-sale conditions following activities. When a road is decommissioned, the entrance will be blocked in a way that successfully keeps motorized traffic from using the road. This is typically accomplished using a combination of logging slash, stumps, boulders, and berms. Any culverts present on the road should be removed to keep natural drainage patterns operational. The road bed will still be present and will be allowed to naturally revegetate over time. The decommissioned road segments will likely still be walkable following completion of logging; however, the road will be allowed to naturally revegetate over time. Over time the corridor may become impassable to foot traffic as brush and trees encroach and grow into the road bed.
81, BFLA	"I would like to give a brief update on the 4 Mile project at our association board meeting this weekend. Last I heard there would be a document out for comments in January, but I have not seen anything. Could you let me know the status of this project?"	Our apologies on the delays. Updated information was sent for the board meeting. Delays were caused by vacant positions, changes in personnel, the government furlough, and a large-scale blowdown event.
81, BFLA	"Thank you for seeking comments from the public on the Fourmile Vegetation Project. Although some of our members say, "What? Why do they have to cut any trees?" Ultimately, we appreciate that the United States Forest Service (USFS) has a complex job to do, and that part of the job is to promote multiple use of the forest including	a) The Chequamegon-Nicolet National Forest (CNNF) 2004 Land and Resource Management Plan provides direction for the management of non-native invasive species (NNIS) and outlines the standards and guidelines when dealing with them (FP 2-25). Specific actions planned in regards to Non-Native Invasive Species (NNIS) can be found in the NNIS Resource Report For

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	logging to reduce the danger of fire or the spread of disease while also promoting the forest as a place of recreation and a source of necessary wood products. One of our members, Kay Scharpf, has been in touch with Kristine Vollmer to express multiple concerns we had with this project proposal. Thanks to their communication, our major concerns have already been addressed… however, some of our members have expressed other concerns, too: a) We would like more information about what is being done to reduce the spread of terrestrial invasive species such as garlic mustard and European marsh thistle. As you know there is a large thistle infestation along Highway 70. Also, as you know, there is a large infestation of garlic mustard on the west side of Babcock Road (FS 2425). A few property owners on the east side of the road have found small areas of garlic mustard which they have been able to manage by pulling; however, we are concerned that from the time the maps were drawn showing where the logging will occur and now, garlic mustard might have jumped from the west side of the road to the east side. Can the 015-1 section be checked one more time before logging begins to be certain the garlic mustard infestation hasn't spread into that area? And if garlic mustard is found, what precautions will be used in logging that area? b) We would like assurance the Scenic Integrity of the roadways in our area (Military, Fournier, Butternut Lake, Babcock, Knapp, and Divide) be maintained. c) On gravel roads, please try to leave a canopy of trees to keep the road damp and the dust down for local residents.	the Fourmile Vegetation Management Project, found in the project record. In addition to Forest Plan direction, the CNNF currently implements a separate Forest-wide project to manage NNIS, the CNNF Invasive Plant Control Project Environmental Assessment. The purpose of this document is to control and eliminate existing populations of NNIS and is updated annually to reflect new NNIS inventory data. Since garlic mustard is a CNNF priority species, every known and/or encountered garlic mustard infestation on the Eagle River-Florence Ranger District, including those in the Fourmile project, are treated and monitored. • Stand 001 in Compartment 2050 was surveyed for rare plants in 2017. During the rare plant survey, three separate garlic mustard infestations were found and inventoried. All three infestations have been treated since being inventoried, during the fall of 2017 (pulled), fall of 2018 (herbicide application) and spring of 2019 (pulled). These infestations will continue to be treated and monitored annually. • The Forest plan standards and guidelines, contractual equipment cleaning clause and project design features will reduce the actual potential for European marsh thistle spread, introduction, establishment, and persistence. European marsh thistle has crossed the threshold where control will be extremely difficult to impossible, due to the extensiveness of the infestation and exorbitant resources (money and time) required. b) Military, Butternut Lake, Babcock, Knapp, and Divide Road are all corridors where we will strive to maintain High Scenic Integrity. Harvest stands along these road corridors would be designed to minimize the evidence of forest management activities by limiting temporary openings a minimum distance of 200 feet from the roads edge. Selective harvesting

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	d) We ask that the area around Harmony Lake be reviewed to preserve the integrity of the area as quite a few residents and visitors find it to be a great mushrooming site. e) We hope that the scenic integrity of the areas around Pat Shay be preserved as it is considered to have remnants of an old-growth forest as John Bates discusses in his book *Our Living Ancestors: The History and Ecology of Old-growth Forests in Wisconsin and Where to Find Them*: Around this area " the best stands include den trees, large snags, and downed coarse woody debris. The topography rolls along with some steep slopes, making the trail all the more interesting . . . Rare and uncommon birds include the gray jay and the black-throated warbler" (p. 220). f) We believe, based on our reading of the proposal, that no trails in our immediate area (map 1 of 3) will be used as haul roads. We are very appreciative of this decision as bikers, hikers, snowshoers, and skiers use these trails year-round. As we continue our partnership with USFS through our shared interests of stewardship and forest sustainability, we recall Wendell Berry's notion that this requires a "long conversation in which all parties are mutually supportive' (qtd. in Bates, p.153). Thank you for giving us an opportunity to be part of the conversation of the Fourmile Vegetative Project. We look forward to hearing your responses regarding our points a-f above…"	techniques may still be used within 200 feet of the roads edge; however, the harvest would be designed to minimize the evidence of forest management. In limited circumstances, a harvesting technique may result in a temporary opening adjacent to the corridor and/or within the 200-foot buffer. However, this would only be the case when mitigating safety concerns or the stands' health and/or natural life cycle is at a point which would result in a natural opening on the landscape, e.g. dead/dying stands or tree species susceptible to wind throw. • Fournier Road is considered a corridor of Moderate Scenic Integrity. Harvest of stands along this road corridor may be moderately evident as temporary openings would be limited to 100 feet from the roadway and temporary openings of no more than 300 lineal feet would be allowed along the roadway, separated by a minimum of 500 feet and not exceeding 1,056 feet per mile along roadways. Selective harvesting techniques may still be used within 100 feet of the road's edge and there may be moderate evidence of management activities within this buffer. c) On high SIO roads, we would maintain minimal evidence of harvesting. Some of the trees by the road would need to be removed because some of them would be safety concerns. For example, overmature aspen may be removed near the road so that those trees don't fall onto the road. Another example would be removal of trees that are leaning into or towards the road to reduce that hazard. Along roads that are not high SIO, there would be some areas where the canopy is removed in the best interest of the surrounding stands. Treatments may include clearcut, overstory removal, thinning, shelterwood, selection, and improvement cuts by gravel roads. Leaving a buffer strip

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		between a clearcut and road to leave canopy cover on the road would pose a safety concern; these trees would be extremely susceptible to windthrow because there would be nothing to protect these trees from the full force of the wind. There will be cases where leaving canopy cover over the road is not feasible. d) The only planned activity in the Harmony Lake area is a 108-acre selection harvest, which is on the western side of the lake. This harvest would be implemented during winter. There would be a minimum 100-foot RMZ (Riparian Management Zone) around the lake that will provide added protection. Selection harvest is one of our least intense harvests. This treatment is necessary to reduce the density in this stand, allowing the stand to grow stronger and healthier. Stands/ trees that are less crowded have more growing space which allows a tree to receive more nutrients to make it grow taller/ stronger and healthier. We did not analyze the impacts of these activities on mushrooms. e) There are no harvest activities proposed directly adjacent to Pat Shay Lake. There are two small portions of stands (222201 & 222020) which lie 190 feet and 160 feet, respectively, at their closest point to the shore of Pat Shay Lake. They are both stands which would receive a selection harvest. CNNF follows the Wisconsin Best Management Practices (BMP) for aquatic areas whenever possible. The Wisconsin BMP requires Lakes to have a 100-foot riparian buffer zone from the Ordinary High Water Mark (OHWM). Further information on design feature codes can be found in Appendix B. More information on impacts to aquatic resources can be found in the Aquatics Report in the project record. f) We do not plan to skid on the Hidden Lakes Trail, although the trail might be crossed by equipment. Snowmobile trails and

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		the Bailey Lake equestrian trails may be used for skidding as appropriate.
130, Lippencott	"First, I would like to echo the issues raised in the most recent letter to you from the Butternut Franklin Lakes Association. I was very pleased to read that the USFS has agreed NOT to do any cutting near the sandbar on Franklin Lake. Thank you!!! But I am VERY concerned in particular about the proposed thinning and clear-cutting in the 008-1, the area to the west of the little lake/pond that feeds into Franklin Lake (down the shore from the sandbar.) This area is a wetlands with a delicate muskeg ecosystem. I have grown up hiking around the little lake and in that forest beyond. It has a unique plantlife, (mosses etc.) that don't exist in the dry forest near the big lake. I have seen a moose, black bear, wolf tracks, many interesting birds. Years ago, we watched the creek leading from the little lake permanently transform as beavers dammed it up and altered the shoreline. **PLEASE do not thin/clearcut in this very wild area near the little lake. I truly believe it is a necessary piece of wilderness that should be preserved as is."	Unit 008-1, considered an area of High Scenic Integrity (HSIO), is scheduled for a shelterwood cut with salmon blading for regeneration. The proposed shelterwood cut is a multi-stage cutting method (consisting of a preparation cut, seed cut, and removal cut) used in a more or less mature stand, designed to establish a new age class for the long-term viability of the composition of the stand. • The preparation cut is to condition the stand for a future seed cut. • The seed cut is a regeneration harvest to obtain natural regeneration by seeding from leave trees and by providing shade from leave trees. The seed cut retains enough trees to provide about 20-50% shade on the ground. • The removal cut is a harvest to remove the overstory from an area regenerated by the preparation and seed cuts. The partial cover of residual mature trees provides the natural or planted seedlings partial shade, increased ground moisture, frost protection, and in some cases, protection from insect damage such as white pine weevil. Currently, the design features for this unit are G27, G50, G55, G95, G96, D1, D16 (Appendix A). The D1 designation requires: 1) No operation of tracked or wheeled vehicles within 15 feet of the high water mark of lakes, designated trout streams and streams 3 feet wide or wider operate wheeled or tracked equipment within 15 to 50 ft. of Ordinary High Water Mark (OHWM) only when ground is frozen or dry. 2) Do not harvest fine woody material within 50 ft of the OHWM. 3) Distances for these measures should be expanded in the case of steep slopes.

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		This is the minimum the CNNF must follow when working within a stand that has a D1 designation. In addition, the CNNF follows the Wisconsin Best Management Practices (BMP) for aquatic areas whenever possible. The Wisconsin BMP requires Lakes to have a 100-foot riparian buffer zone from the OHWM. If a stand is found to be a wetland at a site visit then we would protect the hydrologic function and maintain the natural hydrologic regimes. We would also intend to utilize guidelines found in Wisconsin's Forestry BMPs to maintain water quality and hydrologic wetland functions during activities such as timber harvesting or road and trail construction and minimize fill and maintain cross road drainage when wetland road and trail crossings cannot be avoided. Further information on design feature codes can be found in Appendix B. More information on impacts and mitigations to aquatic resources can be found in the Aquatics Report in the project record.
125 ELPC	ELPC brought concerns on the decision of using an EA for the Fourmile Project when the commenter believes it requires a full Environmental Impact Statement (EIS).	The purpose of an environmental assessment is to briefly provide sufficient evidence and analysis, including the environmental impacts of the proposed action and alternative(s), to determine whether to prepare either an EIS or a FONSI (40 CFR 1508.9). An EA is about supporting a determination as to whether the proposal may result or will not result in significant environmental effects and whether an environmental impact statement is warranted. The CNNF chose to start the environmental review process as an EA due to the history the Forest has conducting environmental analysis for similar type projects and no significant impacts have been found in these past environmental reviews (examples: Townsend EIS, Morgan Lake EA, Greenwood A, and Blacktorch EA). The difference between an

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		EA and an EIS is not how rigorously the analyses are done, although EISs are often longer than EAs. **The size (activity acres), scope (spatial or temporal), and location of a project do not dictate whether an EA or EIS should be used.** • An EIS would not necessarily evaluate more alternatives. The number of alternatives depends on the number of issues important enough to justify another alternative and alternatives suggested by the public or internally. • Using an EA instead of an EIS does not increase the risk that actions will damage natural resources and other values. Each project, whether analyzed as part of an EA or an EIS, includes a rigorous evaluation of cumulative effects for resources at various scales. • "Critical habitat" is a phrase with a specific biological and legal meaning in the context of evaluating habitat for species. No critical habitat is designated for RFSS (Regional Forester Sensitive Species). The justification for conducting an EA rather than an EIS will be included in the draft DN (Decision Notice) and FONSI (Finding Of No Significant Impact), which will be published with the EA at the start of the 45-day Objection period. If any significant impacts would have been found in the course of the EA, the process would have triggered the required EIS and the forest would have begun that process. However, no significant impacts were found and a draft decision and FONSI were released as the final product for the Fourmile objection period.

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125, ELPC	ELPC had concerns that the purposes and needs of the Fourmile project are inconsistent with forest plan goals of restoring and improving wildlife habitat and the forest ecosystem (p. 3)	Being consistent with the land management plan (Chequamegon-Nicolet National Forest Land and Resource Management Plan, or "Forest Plan" does not mean that every project has to have every goal in the Forest Plan as a Purpose or Need. No single project can "focus primarily" on all goals at the same time in the same area. Likewise, no single project is likely to get us from "existing conditions" to "desired future conditions" for all habitat components. Reaching desired future conditions is often a long, time-consuming process, and may require multiple projects and entries over many years. The timeline to reach desired future conditions is often dependent on how quickly – or slowly – trees and other biota grow, how much difference there is between current existing and desired future conditions, how much change can be made in a single entry without causing unacceptable impacts, and acts of nature. The Forest Plan states (p. 1-1): "Forest goals are broad statements describing conditions the forests will strive to achieve. They are not amenable to direct measurement and there are no specific time frames for achieving them. In other words, goals describe the ends to be achieved rather than the means to these ends." One method to improve ecological health, including restoration of habitat suitability, is by managing vegetation. Vegetation management is commonly, and most economically, done through the use of timber sales and associated activities. Forest Plan standards and guidelines, State BMPs, and site-specific design features or mitigation measures, give direction on how to implement activities in a manner that eliminates or minimizes potential adverse impacts.

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125, ELPC	ELPC states (p. 5): "… the purposes and needs for the Fourmile project must also prioritize restoration and improvement of forest interior habitat and the Forest ecosystem."	As designated and described in the Chequamegon-Nicolet Land and Resource Management Plan ("Forest Plan") (p. 3-72 to 3-74), MA 2B (interior forest) is suited for timber production with the complementary theme of coordinating activities with ecosystem restoration (Forest Plan, p. 3-276). In Management areas 2A, 2B, 4A, 8A, and 8D of the Fourmile Project area, there are approximately 7,000 acres that have been identified as overstocked, in need of improved stand structure and suitable for timber production. Silvicultural design is the primary management tool used to meet MA 2B goals. The Forest Plan compares the effect of No Action to the proposed and alternative actions that utilize timber practices and finds that the use of these actions can better attain the desired conditions (Forest Plan Section 3.2). The Forest Plan for Management Areas 2A and 2B does not emphasize even-aged management, but, rather, uneven-aged management (Forest Plan, p. 3-8 thru p. 3-9 and p. 3-44 thru p. 3-46). The Forest plan does not say anything about minimal harvest for MA 2B (p. 3-7 to 3-11). It states "Management activities such as improvement harvest and single-tree selection are designed to mimic natural wind disturbance mortality. Small gaps (up to 60' in diameter) in the canopy may be created to encourage mixed hardwood regeneration." (Forest Plan p. 3-9). Our proposed treatments for MA 2B include some clearcuts and coppice treatments (approx. 155 acres) that account for less than 4% of the MA 2B in the Fourmile project area (Appendix A and Vegetation Report). One of the goals of this project is to maintain and enhance the within-stand diversity of the northern hardwood stands; MA 2B is a Northern Hardwood designation. Certain design features would be used in the selectively harvested areas to foster species diversity, such as the use of large canopy gaps and whole tree

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		logging. As Table 2 in the Vegetation Report show, many of the hardwood stands in the Fourmile Project Area are in the 61-100 year age class. In fact, 49% of the hardwood falls within this 40 year range. As previously noted, for the majority of the analysis area, the Forest Plan emphasis is on uneven-aged management. Only 33% of the hardwood stands in the project area are currently uneven-aged- that is, containing three or more distinct age classes. Thus, one of the needs identified for this project is to move more of the hardwood stands toward uneven-aged conditions. This project has beneficial impacts for wildlife, plants, and their habitats (Biological Evaluation Report). Some of the benefits come from managing the vegetation to provide a path or sequence of conditions that will lead towards the desired future conditions as described in the Forest Plan. Other benefits come from decommissioning approximately 147 miles of road and converting nearly 49 miles of other road into trails (Travel Analysis report, Vegetation Report, and Aquatic Resource Report). Not everything that the Forest Plan directs can be a priority in the same project.
	ELPC contends (p.5) that many of the proposed activities will negatively impact the habitat of RFSS, and are inconsistent with Forest Plan Objective 1.1(b), an objective to improve habitat for RFSS.	Different RFSS species have different habitat requirements. No single project or activity can improve habitat for all RFSS species at the same time in the same place. An activity that improves habitat for one species may not be beneficial for another species. A Biological Evaluation did conclude for several species that a short-term reduction in suitable unoccupied habitat occurs, but dissipates within five years with a final determination of *May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.*

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125, ELPC	ELPC also has concerns on effects of proposed management actions on 8E, 8F, 8G, State Natural Areas, and other special management areas (p. 2-6).	The Fourmile project is only proposing treatments to be done in management areas 2A, 2B, 4A, 4B, 8A, and one stand that was mistakenly mapped under 8F. While Fourmile does have MAs 8E (2%), 8F (8%), and 8G (5%) present in the project area there are no treatments being proposed within those designations (Vegetation report: Table 4). Research Natural Areas (RNA), Management Area 8E, Special Management Areas (SMA), Management Area 8F (including State Natural Areas) were not analyzed as these areas are passively managed and are "generally well buffered from incompatible activities on nearby lands" (CNNF Forest Plan 3-50). There would be no direct impact as vegetation management/timber harvesting is not allowed in MA E, F & G areas (CNNF Forest Plan 3-51, 3-54, 3-57). There are areas within this project area that are bordering but not in Management area 8E. This management area is defined as an Existing Research Natural Area (RNA). No timber harvesting is allowed within the RNA except for if the desired vegetation type would be lost or degraded without treatment. Areas bordering this area should have guidelines of similar prospective. All stands being proposed near RNAs have been prescribed treatments for meeting those guidelines while still meeting the guidelines of their actual management area. Fourmile will follow the Forest Plan and therefore there wouldn't be any indirect effects since management activities adjacent to MA E, F, & G are to be designed to complement their ecological value (CNNF Forest Plan 2-4). Wisconsin's Forestry Best Management Practices (BMPs) are intended to be followed on all applicable stands.

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125, ELPC	ELPC has concerns that the Fourmile DEA's (draft EA) project area description lacks relevant information on the diversity and biological value of lands within the project area (p. 6).	The "Project Area Description" is not a required section for an EA (40 CFR 1508.9 (b) and 36 CFR 220 .7(b). Agencies are encouraged to concentrate on relevant environmental analysis in their EAs, not to produce an encyclopedia of all applicable information. Existing condition information is given in more detail in the resource reports in the project record. Different species and resources use or comprise different types of habitat. Therefore, different aspects of the existing conditions will be relevant to different resources and species, if resource concerns are identified and further analysis is needed.
125, ELPC	ELPC requests that all direct, indirect, and cumulative effects of project activities on each of these special management areas be analyzed (including for the Franklin and Butternut Lake SNA) (p. 6).	Research Natural Areas (RNA), Management Area 8E, Special Management Areas (SMA), Management Area 8F (including State Natural Areas) were not analyzed as these areas are passively managed and are "generally well buffered from incompatible activities on nearby lands" (CNNF Forest Plan 3-50). There would be no direct impact as vegetation management/timber harvesting is not allowed in MA E, F & G areas (CNNF Forest Plan 3-51, 3-54, 3-57). Fourmile will follow the Forest Plan and therefore there wouldn't be any indirect effects since management activities adjacent to MA E, F, & G are to be designed to complement their ecological value (CNNF Forest Plan 2-4). Wisconsin's Forestry Best Management Practices (BMPs) are also intended to be followed on all applicable stands. Further information can be found in the Vegetation Report (in project record) and Appendix A of the EA.
125, ELPC	ELPC has concerns on the impact of Whitetail Deer populations on American Marten and other RFSS species in the project area (p. 6). ELPC states (p. 12): "…the DEA also asserts that [hemlock and cedar] poor regeneration may be attributed to the need for burned or scarified seed beds" yet fails to	Deer populations are influenced by many factors (weather, baiting, and hunting) that are beyond the control of the FS and thus not dictated solely by aspen management (Quinn et al. 2006). Many factors influence the size of a deer population, including, but not limited to: mild to moderate winters in a row; limited antlerless harvest; hunting; predators; food availability;

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<tr><td></td><td>address the enormous impacts to these and other species from excessive whitetail deer populations”.</td><td>disease; etc.

Stenglein and Wojcik (2019) summarize and analyze data on Wisconsin’s white-tailed deer population status in 2018. The Fourmile project area is within Forest, Oneida, and Vilas Counties. These three counties are within Wisconsin’s “Northern Forest Zone 1”. The post-hunt white-tailed deer population estimate decreased 0.5% from 2017 to 2018 in the Northern Forest Zone 1 (Stenglein and Wojcik, 2019). Across the state, post-hunt population size estimates and densities (deer per square mile) were calculated for the DMUs (Deer Management Units) in 2018. Each of the three counties is its own DMU. State-wide, in the 82 DMUs, deer density ranges from 3 to 61 deer/mile^2; with a mean of 27.

Post-hunt Population Estimates of Deer Herd Population Size and Density per Square Mile (Stenglein and Wojcik, 2019).

<table>
<tr><th>County & DMU</th><th>Post-hunt Population Size</th><th>Density of Deer per Square Mile</th></tr>
<tr><td>Forest Forest</td><td>17,500</td><td>17</td></tr>
<tr><td>Oneida Forest</td><td>25,800</td><td>21</td></tr>
<tr><td>Vilas Forest</td><td>17,500</td><td>19</td></tr>
<tr><td>State-wide Total</td><td>1,510,400</td><td>27</td></tr>
</table>

Deer populations fluctuate and factors that influence them historically are the following but not limited to: special hunts (T-Zones, Earn-A-Buck), archery and firearm seasons frameworks and success rates, winter weather conditions, predation and current County Deer Advisory Councils (CDAC)</td></tr>
</table>

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		recommendations. The Natural Resource Board approved objectives for 2018-19 in these counties to increase the deer herd populations in Forest and to maintain it in Vilas and Oneida counties. With these recommendations, it would indicate that the WDNR believes these deer populations are not problematic. Also, managing white-tailed deer below 20 deer/sq mi is recommended to avoid significant impacts on forest vegetation (McGuinnes and deCalesta 1996). It has also been shown that herbivory rates declined precipitously as the amount of early successional habitat increased. Miller et al. (2009) conclude that providing approximately 14% of an area in well-distributed, even-aged managed forests can have substantial impacts on reducing herbivory rates. Possible impacts to American Marten and CNNF RFSS species was summarized in Chapter 3 of the EA; full discussion of impacts can be found in the Biological Evaluation report in the project record.
125, ELPC	ELPC requests that the forest service must take a "hard look" at all relevant impacts of the Fourmile project (p. 7).	See Chapter 3. The Forest Service has taken hard look at potential relevant impacts of the proposed activities. Direct, indirect, and cumulative impacts (including past, present, and reasonably foreseeable future actions) on public and private lands have been analyzed. Specialist reports can be found in the project record.
125, ELPC	ELPC requests that the forest service must analyze impacts of past logging, road construction/reconstruction and use, and activities on private lands on species of concern (p. 7)	Cumulative impact analyses were done to account for past, present, and reasonably foreseeable activities. Each resource considered the activities and events that were or would be relevant to that resource and habitat. Results of those analyses are contained in Chapter 3 of the EA, by resource. Additional detail is available in the resource reports in the project record.
125, ELPC	ELPC states that the "Courts interpreting NEPA cumulative impacts requirements have held that an EIS	That court case is about an EIS; the Fourmile project is using an EA, not an EIS. The requirements for an EA are not the same as

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	must provide "adequate data of the time, type, place, and scale of past timber harvest and [explain] in sufficient detail how different project plans and harvest methods affected the environment… To comply with the NEPA, Forest Service must take a more thorough approach and actually analyze the cumulative impacts of the Forest Service's past logging, road building, and related actions… Forest Service must use the most up-to-date information to analyzed [sic] possible effects…" (p. 7)	the requirements for an EIS". In the preparation of the Fourmile EA, the Forest Service has used the best available scientific information for analyses and determinations of prescriptions. Effects, including cumulative effects, can be found in detail in the resource reports in the project record. Each applicable resource took a hard look at their possible impacts and created a report for the project record to inform the Responsible Official. Extensive research and field work were performed to collect the most up-to-date information. Such as in the creation of Fourmile Biological Evaluation (BE), which details the evaluations and methodology used to analyze impacts to that resource. It is not always feasible to have data for all facets of a project, though all reasonable attempts are made. An example would be the RFSS plant analysis which is limited to coarser characteristics where the Forest Service has measurable and readily available data. These coarser habitat characteristics such as vegetation type (FS VEG Code), structure (size density class), and canopy cover (stand age) have been determined to be relevant, surrogate variables for the finer habitat characteristics, such as microtopography and developed duff layer, where the Forest Service does not have measurable and available data. These finer habitat variables were determined to be relevant habitat variables for each RFSS by the Species Viability Evaluation (SVE) panelists, local and state experts, during the CNNF Forest Plan revision in 2004. Suitable habitat model variables such as slope, the density of predators, the amount of tip-up mounds in the stand, a fragmentation metric, patch size and proximity to water either could not be included in a habitat model because no data exists or, if included in the model, any threshold (e.g. minimum patch size) criteria would have been poorly linked to the biology of

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		these species on the CNNF. Another example is the silviculture cumulative effects analysis which utilized some professional assumptions of what would happen to the Fourmile project area based off the storm damage (July 2019 windstorm) in the nearby Lakewood/Laona district of the CNNF. A Review of New Information was completed for this event in the consideration of its possible impacts to the Fourmile project area and resources (found in full in the project record, in summary in the EA). The Forest Service made every reasonable effort to utilize the most up-to-date data when analyzing impacts to resources. Methodology and instances of missing or lacking data are found in the respective resource reports.
125, ELPC	ELPC also states (p. 9): "Science and common sense demonstrate that logging and roadbuilding destroy habitat, disturb habitat security, increase fragmentation and associated edge areas, kill off prey, facilitate unnatural populations of native mesopredators, and reduce coarse woody debris and snags."	ELPC presents these potential outcomes as if they are givens, as if they will happen in this project. Although these types of effects were probably not uncommon during logging a century ago, they are uncommon these days because over the years, monitoring has helped to develop modern practices that eliminate or minimize these types of effects. Examples of practices can be found in the Forest Plan standards and guidelines (chapter 2) and in the Wisconsin state BMPs (Kafura,D. and N.Kreigel, 2015). In the proposed project area, the net mileage of Forest Service roads will be decreased (147.2 miles of road are proposed to be decommissioned). More information on road activities can be found in the Travel Analysis report, impacts to species can be found in the Biological Evaluation report.

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125, ELPC	ELPC states (p. 9): "The Fourmile DEA fails to adequately address the full spectrum of direct, indirect, and cumulative effects from past, present and reasonably foreseeable actions on NFS lands as well as lands within the project area that are not in federal ownership."	Direct, indirect, and cumulative impact analyses (including past, present, and reasonably foreseeable future actions) on public and private lands have been analyzed. Each resource considered the activities and events that were or would be relevant to that resource and habitat. Results of those analyses are contained in Chapter 3 of the EA, by resource. Additional detail is available in the resource reports in the project record.
125, ELPC	ELPC questions (p. 9): "…how have logging and other actions taken in the Phelps, Fishel, Northwest Howell, and Long Rail projects affected RFSS and TES in their project areas and how will those and other impacts affect species and habitat conditions in the Fourmile project area? Have dispersal corridors for marten been degraded or eliminated and what effect will this have on marten habitat and populations in the project area? How have the size and connectivity of interior forest habitat patches changed over time and what impact will proposed actions have on these landscape-level characteristics?"	Past, present, and foreseeable actions (Table 3-1) is a project list that the resource specialists referred to during the drafting of their cumulative effects analyses. The pertinent projects and the added Fourmile impacts were then analyzed in their given resource sections of the resource reports in the project record. For example, past projects were utilized in the NNIS specialist report, fuels report, and to determine habitat available for TES and RFSS species. Different RFSS and TES species have different habitat requirements. No single project or activity can improve habitat for all species at the same time in the same place. An activity that improves habitat for one species may not be beneficial for another species. Species impacts, including for American marten, can be found in the Biological Evaluation report in the project record. Habitat impacts can be found in the Biological Evaluation and Vegetation Reports of the project record. There was an analysis of Management Indicator Habitats (MIH) that included mature northern hardwood interior forest (MNHIF): Results showed there is currently 120,753 ac. of MNHIF on the ER/FL RD (124,406 ac. on LK/LA and 245,159 ac. Nicolet side) and 3,787 ac. are located in the Fourmile Project area. Of these acres there are 1,602 ac. (1% of ER/FL RD) that have proposed timber harvest treatments and only 78 ac. (0.06% of ER/FL RD and 4.8% of project area) of those stands have prescriptions that will result in those stands no longer being classified as MNHIF. As a result, 95% of these MNHIF project stands with harvest

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		treatments would maintain a closed canopy, age, forest type, improve the quality and accelerate their growth and therefore remain classified as MNHIF. As a result of this information (lack of impact), no further analysis was warranted on interior forest habitat and a full report was not conducted but presented it in letter to file, found in the project record. Additionally, nearly all proposed actions do not change the connectivity of the forest, as these plots have all been managed by the Forest Service in the past. The few proposed clear-cut sites are Aspen dominated and analysis projects the areas to return to Aspen dominated within 3 years (Vegetation Report). The current targeted Aspen stands are reaching the end of their lifespan and will benefit from the clear-cut by allowing new growth to flourish. In order to systematically analyze cumulative effects of this project and many other projects, information about all major current and planned vegetation management projects on the Forest were evaluated. Subsequently, direct, indirect, and cumulative impact analyses (including past, present, and reasonably foreseeable future actions) on public and private lands have been analyzed. Each resource considered the activities and events that were or would be relevant to that resource and habitat. Results of those analyses are contained in Chapter 3 of the EA, by resource. Additional detail is available in the resource reports in the project record.
125, ELPC	ELPC further states (p. 12): "The DEA shows that nearly 19,000 acres of timber harvest has occurred in the project area since 1975 including 6,300 acres of thinning, 3,600 acres of clearcuts, 3,300 acres of selection harvest and assorted others. Unfortunately, Forest Service has provided no discussion of the actual impacts of these harvests and associated road management actions in the DEA. For example, how have these past actions contributed to the	Direct, indirect, and cumulative impact analyses (including past, present, and reasonably foreseeable future actions) on public and private lands have been analyzed; including the impacts of the proposed road actions. Each resource considered the activities and events that were or would be relevant to that resource and habitat. Specific effects of past vegetation actions can be found in detail in the Vegetation report found in the project record. Summary results of those analyses are contained in Chapter 3 of

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	serious issues raised in the most 2016-2017 Monitoring and Evaluation report summarized above?"	the EA, by resource. Impacts to RFSS species, as referenced in the 2017 Monitoring and Evaluation report, can be found in Chapter 3 of the EA and in the Biological Evaluation in the project record.
125, ELPC	ELPC states (p. 12): "Simply asserting that "current conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects" fails to make any meaningful assessment of how plant and animal communities have changed over time in response to timber harvests or how road construction, maintenance and use have affected waterways, plants and animal populations, species diversity, structural characteristics of forests including patch size and location, wetlands, and other ecosystem types…. More concerning is the fact that no specific actions were included in the project that addresses these serious issues with RFSS and their population status. These types of impacts are not reflected in aggregate values for overall harvest, stand age or the other limited data presented in the DEA."	Project area direct, indirect, and cumulative impact analyses (including past, present, and reasonably foreseeable future actions) have been analyzed. Each resource, including wildlife and plants, have considered the activities and events that were or would be relevant to that resource and habitat. Results of those analyses are contained in Chapter 3 of the EA, by resource. Additional detail is available in the resource reports in the project record. Chapter 3 of the EA contains summary impacts by resource. Biological assessments of species, including RFSS, have been done and can be found in detail in the Biological Evaluation report in the project record. Vegetation analysis and can be found in the Vegetation report in the project record.
125, ELPC	The ELPC stated (p. 12-13): "…Forest Service must obtain for each species and population up-to-date information on life history, population trends within the CNNF and the region, and factors limiting population growth or threatening population stability. For the Northern goshawk, Red-shouldered hawk, and American marten, information from monitoring and research programs, including those run by the Wisconsin Department of Natural Resources (WDNR) and non-governmental entities, should include data from the most recent monitoring season and previous seasons…viability concerns are escalated by the likely	Extensive research and field work was performed to collect the most up-to-date information as species, to the best of our ability. Species evaluations and methodology can be found in the Fourmile Biological Evaluation (BE), found in the project record. See below for relevant excerpts. Red-shouldered Hawk **(BE report)**: Nesting territories and nest locations were obtained from John Jacobs; John Jacobs has been monitoring red-shouldered hawks on the NNF for over 30 years. <u>There are no historic nesting territories in the project area (active in the past 10 years) and no new nests were found</u>

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	insufficiency of the Forest Service's 30- acre no logging and 330-foot restricted logging Northern goshawk and Red-shouldered hawk nest buffers…such buffers have proven insufficient to protect goshawk nests from predation, which is a significant problem in fragmented forests such as the Chequamegon- Nicolet".	during the 2017 survey season. NHI data had no reports of red-shouldered hawks in the project area. As a result, there would be no direct impacts to nesting birds from both alternatives. If any new territories are located in the future, nest protection measures would be implemented (USDA Forest Service, 2004a). This would include a 30-acre no cut buffer surrounding nest site. Surrounding that buffer would be 330 ft. buffer where only activities that do not lower canopy closure below 80% and that are considered uneven-aged management would occur. These guidelines would be followed under all action alternatives and are consistent with the WDNR work guidelines for forestry and raptor nest site protection (Woodford, 2008). These measures protect red-shouldered hawk reproduction, which is believed to be the limiting life history stage of the species in Wisconsin. Northern Goshawk: Goshawks used to be a RFSS but were removed from that list and therefore will not be considered in the Fourmile Project BE. It was removed in 2008 when the Northern Goshawk Bioregional Monitoring Study was conducted to evaluate the viability and distribution of goshawks in the Western Great Lakes (WGL). These results could be the foundation for a population viability risk evaluation at the bioregional scale. The WGL Bioregional Monitoring provided an unbiased estimate of distribution and abundance across agency boundaries and addressed a wide range of management regimes, all of which have documented occurrences of goshawk. It also used agency-developed and peer-reviewed protocols that have been used in multiple bioregions of the species and is currently the best available science. Results of WGL Bioregional Monitoring Report (Bruggeman, J.E., Andersen D.E., and James E. Woodford, 2009) concluded that northern goshawks occur at greater densities than was previously thought throughout the WGL. It determined that across the WGL, goshawk occupancy was estimated to be 5,184 ±199 (individuals) and are widely

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		distributed and abundant (consistent with densities expected for a "low-density species"). In Wisconsin, Bruggeman et al. (2009) estimated 903± 110 individuals and on the CNNF the estimate was 442±224 goshawks based on detection probabilities. A review of these results by Dr. John Curnutt (Currnutt, 2009) indicated that northern goshawk Minimum Viable population estimate is likely secure for more than 40 generations, which is a commonly applied threshold of viability. Based on these results, the CNNF will continue to implement the current Forest Plan standards and guidelines (Forest Plan Chapter 2 p. 2-20 and 2-21) for this species to ensure continued abundance and distribution and ensure compliance with our Federal Migratory Bird Treaty Act MOU with FWS. For the Fourmile project area, analysis found that there were 8 goshawk nesting territories in the project area. One nest site is very old and has no nesting data other than a dot on the map (ON-01), 4 nests have not been active in the past 10 years and as a result do not need protective nest buffers (FO-17, FO-26, FO-27, FO-33), 3 have been active in the past 10 years; however one nest is gone (FO-46; last active 2013, nest gone 2016), another has not been active since 2009 (VI-05), 1 was active in 2015 but it is just outside the project boundary and the 30 acre nest buffer enters the project area (FO-37). The Forest Plan standards and guidelines for protecting hawk nests would be implemented only at FO-37 under all of the action alternatives. There were no concerns brought forward regarding goshawks during the scoping period. As a result of this information (lack of impact), there was not a concern with the viability of goshawk due to project activities. A full report was not conducted, but presented results in a letter to file, found in the project record. American Marten **(BE report):** During Forest Plan revision, two Species Viability Evaluation panels were convened

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		to assess the risks/opportunities/impacts of the Forest Plan alternatives (USDA FS, 2004b, pp. B-25 to B-33). The Panels did not identify minimum population sizes or habitat areas and such thresholds have not been identified by any group (USFWS, USFS, GLIFWC, etc.) before or since. Consequently, the relative objective of maintaining or increasing the quantity or quality of marten habitat has taken the place of absolute viability objectives. The 2011 Management Plan for marten states the overall management objective is to establish and maintain two or more self-sustaining American marten populations in Wisconsin. This diversity of forest communities used strongly suggests that tree species composition is not as important as overhead cover and residual patch size (WDNR, 2011). Further it states that a conservative minimum viable population of 300 individuals (with a minimum of 50% females) is needed for a marten population to persist at least 100 years (WDNR, 2011). Also critical to marten use is the presence of large snags, fallen trees, stumps and root mounds known as coarse woody material (CWM) (WDNR, 2016e). The CNNF has utilized numerous data sources when analyzing for impacts to American Marten including the Wisconsin DNR which has conducted a 119-mile winter marten track survey since 1982 across the Nicolet side of the CNNF which includes approximately 28 miles in the Fourmile project area. In 2015-16, the 3-year moving averages for marten track rates showed a decline, but it was not as sharply as expected (Woodford, J. and C. Lapin, 2015). Some of these decreases could be attributed to the soft and deep snow conditions present during these survey periods. These snow conditions likely led to reduced travel and activity by many northern forest mammal species during the survey period (Lapin C. and J. Woodford, 2014). In the Fourmile study area during the winter of 2016-17 there were 7 positive marten tracks reported. Also for that time on

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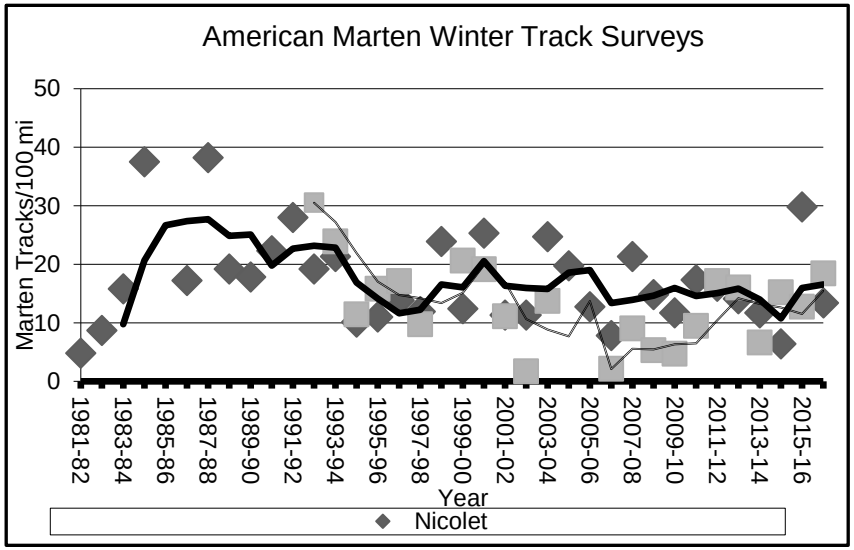
		the Nicolet side, the 3-year moving average for the marten track rates were similar and relatively stable even though the marten track rates decreased by 55% on the Nicolet side (BE- Figure 10).



BE- Figure 1. Marten track counts from 1981-2017 within and adjacent to the Nicolet and Chequamegon MPAs in northern Wisconsin.

In addition, the WDNR, Forest Service, and UW-Madison conducted marten research on the ER/FL ranger district from 2015 to 2017 to quantify the current status of the marten population and to evaluate the long-term success of the reintroductions. During those three winters, 174 marten hair snare traps were set over 8 weeks between January and March as part of a non-invasive genetic mark-recapture study. A total of 141 marten samples were collected and identified across the District. The Fourmile project area contained 35 traps each year and had 15 positive marten samples collected over that time period. In the winter of 2018-19 the WDNR and Forest Service began another

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		marten study that that used trail cameras to identify individual animals in an attempt to determine occupancy and estimate populations. There were at total of 72 camera sets across the ER/FL RD with the 20 sets in the Fourmile project area and 8 within the 1-mile buffer. There was one positive observation in the project area and 4 within the buffer.
125, ELPC	The ELPC further states (p. 14): "…the wildland complex surrounding the Argonne experimental forest and Headwaters Wilderness provides large, connected patches of suitable habitat for marten and other interior forest species. Despite the use of these areas by sensitive species, virtually all the MA 2B lands in the project area are slated for logging and road management activities. Other MAs focused on interior conditions that provide important habitat for marten and other species are also slated for intensive timber harvest. In fact, most suitable habitat for marten in the project area that is open for timber harvest is slated for logging leaving little undisturbed habitat for this RFSS struggling to recover".	Approximately 20% of the Eagle River-Florence district is categorized as MA 2B; Fourmile is approximately 8% MA 2B (Vegetation report p. 13, Table 4). As designated and described in the Forest Plan (p. 3-72 to 3-74), MA 2B is suited for timber production with the complementary theme of coordinating activities with ecosystem restoration (Forest Plan, p. 3-276). With this ecosystem restoration emphasis in mind, MA 2B was considered an Adaptive Management Area (AMA) and emphasizes 'larger trees' to a greater degree than other suited MAs on the CNNF. Because of this emphasis, the volume/acre in the AMAs is expected to be 22% less than from the other suited lands (Forest Plan p 3-297). MA 2B goals of the forest plan were developed not only considering viewpoints of the Forest Ecologist and the 1994 Scientific Roundtable document, but also incorporated scientific literature, public involvement, and interdisciplinary deliberations. Management Areas 2A, and 2B does not emphasize even-aged management, but, rather, uneven-aged management (Forest Plan, p. 3-8 thru p. 3-9 and p. 3-44 thru p. 3-46). One of the goals of this project is to maintain and enhance the within-stand diversity of the northern hardwood stands. Design features would be used in the selectively harvested areas to foster species diversity such as the use of large canopy gaps, and whole tree logging. Almost 50% of the hardwood stands in the Fourmile Project Area are in the 61-100 year age class. As previously noted, for the majority of the analysis area, the Forest Plan

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		emphasis is on uneven-aged management. Only 33% of the hardwood stands in the project area are currently uneven-aged-that is, containing three or more distinct age classes. Thus, one of the needs identified for this project is to move more of the hardwood stands toward uneven-aged conditions (Vegetation report). National Forest system lands within the project area were evaluated for direct and indirect effects of alternatives to marten or its habitat. All harvest treatments were considered as well as road actions, opening improvement and impacts from fuel treatments. Though marten are known to be found in the Fourmile project area (BE report p. 69-76) the impact is to habitat. Within the project area immediately after implementation there is a 19% loss of suitable habitat with the action alternatives. Also, five years post-harvest activities there is still a reduction in suitable habitat in the project area of 3.6%. This loss of habitat will be long term due to these reductions are a result of clear-cuts, shelterwood and overstory removal harvests treatments within aspen and birch habitats. Nevertheless, this loss would occur naturally in these aspen stands due to them entering into a growth stagnation and deterioration phase. However, at the District and Forest levels 5 years post implementation there will be an increase in suitable habitat for marten of 5-6 %. Research Natural Areas (RNA), Management Area 8E, Special Management Areas (SMA), Management Area 8F (including State Natural Areas) were not analyzed. There would be no direct impact as vegetation management/timber harvesting is not allowed in MA E, F & G areas (CNNF Forest Plan 3-51, 3-54, 3-57). Fourmile will follow the Forest Plan and therefore there wouldn't be any indirect effects since management activities adjacent to MA E, F, & G are to be designed to complement their ecological value (CNNF Forest Plan 2-4).

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		Road management within marten habitat within the action alternative will have 98 miles of decommissioned roads, 4.6 miles reconstruction and remain open, 21.4 miles reconstruction than close, 0.70 miles new construction than close and 35.8 miles of roads converted to trail (BE p. 73). This reduction in roads would be an advantage for marten because they are considered a disturbance-sensitive animal that avoids areas of intensive use. Road construction and improvement disturbances may temporarily (days to weeks) displace individuals (due to avoidance of people, noise, etc.).
125, ELPC	ELPC states (p. 15): "To comply with NFMA's viability requirement, the Forest Service must fully analyze the issues discussed above to ensure that the Fourmile Project and other past, present, and reasonably foreseeable logging and road-building activities in the Chequamegon-Nicolet will not threaten the viability of Red-shouldered hawk, Northern goshawk and American marten. While the Fourmile DEA admits that individual marten may be affected by proposed activities, no mention of their population status is provided. It is essential that Forest Service not only analyze the current population status of marten in the project area and CNNF as whole, but also provide evidence that damaging habitat and impacting individual martens will not harm local and regional populations".	Impact analysis and current known status of species can be located in the Biological Evaluation report, found in the project record. In order to systematically analyze cumulative effects of this project and many other projects, information about all major current and planned vegetation management projects on the Forest were evaluated. This information was organized by species and by using their habitat models described above, we are able to calculate the current amount of habitat (acres) and annual changes to the availability of this habitat resulting from the short and long-term effects of each management project. For the purposes of wildlife effects analyses, short term effects are 5 years or less and long-term effects are greater than that (often up to 50 years) (St. Pierre, M., 2010). Where applicable, in growth and outgrowth of habitat (changes resulting from natural aging of stands) was also projected. These projections represent a major component in the cumulative effects analysis for any Forest project and cumulative effects analysis boundary.

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125, ELPC	ELPC states (p.15): "Forest Service has not shown that it has selected the appropriate ecological or biological measures for MIS monitoring… Sporadic track counts and hair snare surveys are the extent of Forest Service's actual marten monitoring. As a result, accurate and reliable population parameters are not available for marten, despite its assumed role as a surrogate for the status of other species utilizing similar habitats… Instead of comprehensive population monitoring, the Forest Service relies largely on habitat availability as a proxy measurement for population success. While some courts have validated this "proxy-on-proxy" approach for MIS monitoring, many have held that this approach is insufficient to satisfy NFMA's viability requirement where Forest Service relies on a flawed model in determining how much "suitable" habitat is available for a particular species".	Numerous scientific studies took place to evaluate the marten population in the Forest, including but not limited to track counts and hair snares. Specifically, Woodford et. (2005) conducted a mark-recapture study in the Nicolet MPA that provided a population estimate of 71 +30 for the area sampled. That estimate was extrapolated to 221 + 61 for the Nicolet MPA and adjacent areas. The WDNR has also conducted a 119-mile winter marten track survey since 1982 across the Nicolet side of the CNNF which includes approximately 28 miles in the Fourmile project area. WDNR, Forest Service, and UW-Madison conducted marten research on the ER/FL RD from 2015 to 2017 to quantify the current status of the marten population and to evaluate the long-term success of the reintroductions. During those three winters, 174 marten hair snare traps were set over 8 weeks between January and March as part of a non-invasive genetic mark-recapture study. A total of 141 marten samples were collected and identified across the District. The Fourmile project area contained 35 traps each year and had 15 positive marten samples collected over that time period. Additionally, in the winter of 2018-19 the WDNR and Forest Service began another marten study that used trail cameras to identify individual animals in an attempt to determine occupancy and estimate populations. There were at total of 72 camera sets across the ER/FL RD with 20 set in the Fourmile project area and 8 within the 1-mile buffer. There was one positive observation in the project area and 4 within the buffer (BE report p. 69-71). Additional information on marten and habitat suitability can be found in the Biological Evaluation report.

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125, ELPC	ELPC states (p. 16): "Effective MIS monitoring evaluates the population trends of species that are uncommon or rare or species that rely on highly-specific habitat characteristics to ensure that an ecosystem can support optimal native biodiversity. Prior to approving the Fishel Project, the Forest Service must adequately account for how MIS population trends are being affected by logging in the CNNF, as it is required to do under the 2004 Forest Plan, in order to ensure that the proposed logging and road-building do not compromise the health of the Forest ecosystem".	The Fishel project is not currently under review nor part of the Fourmile project area and is therefore not relevant nor requiring further review.
125, ELPC	ELPC states (p. 16): "The Forest Service must ensure that it considers all factors that are relevant to the suitability of habitat. For Northern goshawk and Red- shouldered hawk, for example, relevant factors include: canopy closure, tree height, stand basal area, tree species, open understories, size and amounts of coarse woody debris and standing snags, tip-up mounds, slope, predators, fragmentation, edge, and patch size, and/or proximity to water (for Red-shouldered hawk) or human disturbances (for Northern goshawk). In evaluating factors relevant to the suitability of habitat for these sensitive hawk species, the Forest Service should also consider post-fledgling areas and foraging areas, not just nesting habitat. Such areas are typically larger than the nesting habitat, but are critical to a species' survival".	Each RFSS was reviewed for new information. This review included consultation with local and state experts, new literature, and how the scientific information was used in the development of the 2004 Chequamegon-Nicolet National Forest Land and Resource Management Plan. Considering the best available and most recent scientific information, the relevant factors for each species were determined. Species specific review can be found in the project record's Biological Evaluation report. Models were developed to apply available data to this best available science so that determination of suitable habitat could be spatially and temporally assessed (St. Pierre, M., 2010). These models include a description of suitable habitat, both in qualitative terms and the Forest Service's Vegetation (FSVeg) database which describes forest cover or vegetation type, size, density, and year of origin. The habitat variables of forest type, age of the stand, and canopy cover were chosen because they represent the larger suite of variables (including tree height, stand basal area, amount of large woody debris and snags) that are related to species' habitat preferences. Different forest types are defined by the tree species diversity within the stand. The age of the stand is correlated with the structural complexity of the stand;

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		older stands have more structure (downed wood, snags, trees of variable height, etc.) It is recognized that the relationships between stand age and these other variables may not be linear but they are positive height (Carmean, W.H., J.T. Hahn, R.D. Jacobs., 1989), large woody debris in 40+ year old stands (Gore, J.A. and W.A. Patterson III, 1986). The outcome of a review of the literature resulted in setting an age cut-off (50 years) by which time it is expected that the tree heights and diameters, and LWD accumulation have exceeded the minimums suggested in the literature for a number of species with an affinity for mature hardwood forest (such as red-shouldered hawk and American marten). Additional variables such as slope, the density of predators, the amount of tip-up mounds in the stand, a fragmentation metric, patch size and proximity to water either could not be included in a habitat model because no data exists or, if included in the model, any threshold (e.g. minimum patch size) criteria would have been poorly linked to the biology of these species on the CNNF. Furthermore, the potential gains in the accuracy of the models would have been undermined by our guesses at the values of these habitat components for which we have no data on the species' minimum requirements or maximum tolerances. For red-shouldered hawks canopy closure was an important variable in determining the suitability of habitat such that greater canopy closure is better for the species. In an analysis of the habitat currently being used by these species on the CNNF, 80% emerged as an appropriate threshold for canopy closure and it is consistent with the habitat use of these species elsewhere in North America. Goshawks used to be a RFSS but were removed from that list and therefore will not be considered in the Fourmile Project BE. It was removed in 2008 when the Northern Goshawk Bioregional Monitoring Study was conducted to evaluate the viability and

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		distribution of goshawks in the Western Great Lakes (WGL). These results could be the foundation for a population viability risk evaluation at the bioregional scale. The WGL Bioregional Monitoring provided an unbiased estimate of distribution and abundance across agency boundaries and addressed a wide range of management regimes, all of which have documented occurrences of goshawk. It also used agency-developed and peer-reviewed protocols that have been used in multiple bioregions of the species and is currently the best available science. Results of WGL Bioregional Monitoring Report (Bruggeman, J.E., Andersen D.E., and James E. Woodford, 2009) concluded that northern goshawks occur at greater densities than was previously thought throughout the WGL. It determined that across the WGL, goshawk occupancy was estimated to be 5,184 ±199 (individuals) and are widely distributed and abundant (consistent with densities expected for a "low-density species"). In Wisconsin, Bruggeman et al. (2009) estimated 903± 110 individuals and on the CNNF the estimate was 442±224 goshawks based on detection probabilities. A review of these results by Dr. John Curnutt (Currnutt, 2009) indicated that northern goshawk Minimum Viable population estimate is likely secure for more than 40 generations, which is a commonly applied threshold of viability. Based on these results, the CNNF will continue to implement the current Forest Plan standards and guidelines (Forest Plan Chapter 2 p. 2-20 and 2-21) for this species to ensure continued abundance and distribution and ensure compliance with our Federal Migratory Bird Treaty Act MOU with FWS. However, analysis found that there are 8 goshawk nesting territories in the project area. One nest site is very old and has no nesting data other than a dot on the map (ON-01), 4 nests have not been active in the past 10 years and as a result do not need protective nest buffers (FO-17, FO-26, FO-27, FO-33), 3 have been active in the past 10 years; however one nest is gone (FO-46; last active 2013,

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		nest gone 2016), another has not been active since 2009 (VI-05), 1 was active in 2015 but it is just outside the project boundary and the 30 acre nest buffer enters the project area (FO-37). The Forest Plan standards and guidelines for protecting hawk nests would be implemented only at FO-37 under all of the action alternatives. There were no concerns brought forward regarding goshawks during the scoping period. As a result of this information (lack of impact), there was not a concern with the viability of goshawk due to project activities. A full report was not conducted, but presented results in a letter to file, found in the project record.
125, ELPC	ELPC states (p. 16): "...for American marten, the presence of yellow birch, patch size, location and distribution across the landscape, corridors between patches, fragmentation, predators, and the size and amount of coarse woody debris and cavity trees are critical habitat variables. Marten experts in the Lake States agree that "a reliable habitat suitability model cannot be applied to marten...without measures of CWD (coarse woody debris)." These elements must be factored into the habitat suitability model that the Forest Service is using as the basis of its cumulative impacts and viability analyses".	Models were developed to apply available data to this best available science so that determination of suitable habitat could be spatially and temporally assessed (St. Pierre, M., 2010). These models include a description of suitable habitat, both in qualitative terms and the Forest Service's Vegetation (FSVeg) database which describes forest cover or vegetation type, size, density, and year of origin. The habitat variables of forest type, age of the stand, and canopy cover were chosen because they represent the larger suite of variables (including tree height, stand basal area, amount of large woody debris and snags) that are related to species' habitat preferences. Different forest types are defined by the tree species diversity within the stand. The age of the stand is correlated with the structural complexity of the stand; older stands have more structure (downed wood, snags, trees of variable height, etc.) It is recognized that the relationships between stand age and these other variables may not be linear but they are positive (Carmean, W.H., J.T. Hahn, R.D. Jacobs., 1989; Gore, J.A. and W.A. Patterson III, 1986).
125, ELPC	ELPC states (p. 17): "…the Forest Service must ensure that viable populations of sensitive species are "well-	The Species Viability Evaluation (SVE) process for the CNNF Forest Plan revision in 2004 included consultation with local and

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	distributed" throughout the Forest. 36 C.F.R. 219.9 (1982). The 2004 Forest Plan itself violates this provision by designating only Management Areas 2B, 3B, and 4B to be managed for forest interior species of concern. (2004 Forest Plan EIS, App. J. at J-69) …. In projects such as Fourmile, Forest Service must ensure that the viability of sensitive interior species is not threatened and must give greater consideration to populations of these species living outside of 2B management areas".	state experts and the review of new and existing literature/scientific information as it pertained to TES/RFSS populations and suitable habitat; including interior habitat. SVE panelists considered the best available and most recent scientific information and determined the relevant variables for each TES/RFSS and determined that the management allocations to be sufficient for interior forest species viability. Additionally, all RFSS plant occurrences receive specific design features regardless of management area in which they occur. RFSS plant occurrences are protected by no activity, no disturbance buffers reducing the potential for direct impact (trampling during harvest operations). Occupied stands are harvested under frozen ground conditions to reduce potential impacts to undocumented RFSS plant occurrences. Residual canopy closure of occupied stands remains at or above 80% following harvest maintaining habitat suitability. Specific design features for individual RFSS plant species are listed in the Biological Evaluation Resource Report for the Fourmile Project.
125, ELPC	ELPC brought up concerns (p. 17-18) on the spread of NNIS species within the project area and a possible lack of NNIS monitoring programs. Specifically, "…the role that past, present, and reasonably foreseeable logging, road building, recreation, private lands management and related actions have had on the spread of invasive species in the Fourmile project area and the CNNF in general...[the Fourmile Draft EA] does not provide information on the spatial extent of these infestations where they do occur nor does it discuss species composition or the mechanism by which those NNIP species became established in the project area. Moreover, metrics for measuring direct (proximity of activities to NNIP infestations), indirect (soil disturbance and light availability) and cumulative effects	Analysis of NNIS was done and can be found in the project record. The Chequamegon-Nicolet National Forest (CNNF) Land and Resource Management Plan provides direction for the management of Non-Native Invasive Species (NNIS). All past activities and related actions including establishment history have been integrated into the existing condition. The spatial extent and composition of known, documented Non-Native Invasive Plant (NNIP) infestations is addressed and discussed under "1.3 existing condition," "Appendix B" and "Appendix C" in the "Non-Native Invasive Species Resource Report For the Fourmile Vegetation Management Project." The mechanism of establishment for known NNIP was not addressed in the "Non-Native Invasive Species Resource Report For the Fourmile Vegetation Management Project," as it is

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	(soil disturbance, light availability, net change in road miles) of proposed actions on establishment, persistence and spread of NNIP do not address the actual impacts of those species on natural resources. They also fail to address NNIP that can spread in shaded conditions or aquatic systems" Additionally ELPC states (p. 18) that "…the DEA conclusions that the risk of establishment, persistence, and spread of NNIP would be increased across thousands of acres of treated stands (DEA p 25), and that conditions favoring numerous NNIP species would persists for 5 to 50 years on many of these lands, Forest Service erroneously minimizes those risks by assuming a net reduction in roads and application of management guidelines is sufficient to conclude that Alternative 2 is not "expected to result in appreciable adverse cumulative effects relative to NNIP". Furthermore, the decision to exclude stands with winter harvest restrictions from the analysis ignores NNIP that can spread via animal vectors and by physical mechanisms (e.g. wind) and establish themselves in those areas. Forest Service must study what impacts the timber sale would have on the spread of these and other invasive species, what impacts the spread of invasive species would have in the project area and the CNNF, and whether the protective measures designed to prevent the spread of such species are effective".	unknown for all documented NNIP infestations. Furthermore, it would be impossible and impractical to infer whether a NNIP infestation was introduced via wind, flowing water, wildlife, passenger vehicles, off-highway vehicles, logging trucks and equipment, people or pets. The purpose of the "Non-Native Invasive Species Resource Report For the Fourmile Vegetation Management Project" is to analyze how the proposed actions and connected actions affect the introduction, establishment, spread, and persistence of NNIP, not the effects of NNIP on the ecosystem. Project implementation would follow the Forest Plan standards and guidelines and specific design features listed in "1.2 Background" and "3.0 Project Design Feature" of the "Non-Native Invasive Species Resource Report For the Fourmile Vegetation Management Project," respectively, and would be implemented using an equipment cleaning clause, reducing the actual potential for NNIP spread, introduction, establishment, and persistence, resulting in no direct spread of known infestations and a low risk of new introductions. In addition to Forest Plan direction, project design features and equipment cleaning clause the CNNF currently implements a separate Forest-wide project to manage NNIP, the CNNF Invasive Plant Control Project Environmental Assessment. The purpose of this document is to control and eliminate existing populations of NNIS and is updated annually to reflect new NNIS inventory data. Harvesting during frozen ground conditions reduces the risk of NNIP introduction and spread by mitigating soil disturbance associated with treatment implementation (i.e. caused by logging equipment). Stands proposed for frozen ground harvests where excluded from the soil disturbance analysis only and were included in the light availability analysis. NNIP that can spread in shaded conditions is addressed under "1.6.3.2 Light

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		Availability (Indirect & Cumulative Effects) in the "Non-Native Invasive Species Resource Report For the Fourmile Vegetation Management Project." The only effect anticipated to persist on the landscape for 5 to 50 years is increased light availability resulting from project implementation, indirectly in the Fourmile Project area (6410 acres; 14.5%) and cumulatively in the Fourmile project area (7,390 acres; 16.8%) and Eagle River Ranger District (24,058 acres; 7.6%). The purpose of the "Non-Native Invasive Species Resource Report For the Fourmile Vegetation Management Project" is to analyze NNIP introduction, establishment, spread, and persistence effects caused by the proposed actions and connected actions affect, not all modes of establishment such as wind and animals. Timber harvesting activities in the Fourmile project would be implemented using an equipment cleaning clause, reducing the amount of soil moved between sites and the risk of NNIS introduction. Overall, it is assumed that the net reduction in total open road mileage in the project area (which would halt motorized traffic along those roads slated to become decommissioned corridors) would reduce the amount of vehicle vectors and the risk of NNIP spread. However, the few proposed road activities which are intended to improve some corridors or construct new roads will increase the risk of NNIS introduction in those specific locations. This would be due to the alteration of physical site conditions (increased light and soil exposure will create suitable habitat for invasion), by altering disturbance regimes (frequent disturbance associated with road traffic and maintenance will create a continuous opportunity for introduction and establishment), by disrupting existing vegetation (the reduced competitiveness of native species will promote establishment), and by increasing dispersal ability and probability of chance introductions (roads act as corridors for dispersal via animal and human vectors)

<table>
<tr><th>Letter #</th><th>Public Comments & Questions</th><th>Team Responses & Comments</th></tr>
<tr><td></td><td></td><td>(Hansen, M.J. and A.P. Clevenger, 2005) (Parendes, L.A. and J.A. Jones, 2000) (Trombulak, S.C. and C.A. Frissell, 2000) (Von Der Lippe, M. and I. Kowarik, 2007) (Watkins, R. Z., J. Chen, J. Pickens, and K.D. Brosofske, 2003). Mitigation measures, as previously described in the above response and in the NNIS report in the project record, will be implemented with the intention to reduce the likelihood of NNIS spread.</td></tr>
<tr><td>125, ELPC</td><td>ELPC raised concerns on the impacts of possible increases in the White-Tailed Deer population density.

ELPC states (p. 18): “In analyzing environmental impacts from the Fourmile timber sale, the Forest Service must consider (a) impacts to the existing deer population from aspen clearcuts and (b) impacts to forest conditions as a result of these changes in deer population”. They further state (p. 20): “A thorough analysis of deer impacts is necessary because the Forest Service is proposing significant amounts of logging on the theory that it can achieve particular goals through such management activities. The agency must examine whether and how these regeneration goals can be met given the deer problem before making a determination about appropriate vegetation management in the project area”.</td><td>Stenglein and Wojcik (2019) summarize and analyze data on Wisconsin’s white-tailed deer population status in 2018. The Fourmile project area is within Forest, Oneida, and Vilas Counties. These three counties are within Wisconsin’s “Northern Forest Zone 1”. The post-hunt white-tailed deer population estimate decreased 0.5% from 2017 to 2018 in the Northern Forest Zone 1 (Stenglein and Wojcik, 2019). Across the state, post-hunt population size estimates and densities (deer per square mile) were calculated for the DMUs (Deer Management Units) in 2018. Each of the three counties is its own DMU. State-wide, in the 82 DMUs, deer density ranges from 3 to 61 deer/mile^2; with a mean of 27.

Post-hunt Population Estimates of Deer Herd Population Size and Density per Square Mile (Stenglein and Wojcik, 2019).
<table>
<tr><th>County & DMU</th><th>Post-hunt Population Size</th><th>Density of Deer per Square Mile</th></tr>
<tr><td>Forest Forest</td><td>17,500</td><td>17</td></tr>
<tr><td>Oneida Forest</td><td>25,800</td><td>21</td></tr>
<tr><td>Vilas Forest</td><td>17,500</td><td>19</td></tr>
</table>
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State-wide Total	1,510,400	27

Deer populations are influenced by many factors (weather, baiting, and hunting) that are beyond the control of the FS and thus not dictated solely by aspen management (Quinn et al. 2006). Many factors influence the size of a deer population, including, but not limited to: mild to moderate winters in a row; limited antlerless harvest; hunting; predators; food availability; disease; etc.

Deer populations fluctuate and factors that influence them historically are the following but not limited to: special hunts (T-Zones, Earn-A-Buck), archery and firearm seasons frameworks and success rates, winter weather conditions, predation and current County Deer Advisory Councils (CDAC) recommendations. The Natural Resource Board approved objectives for 2018-19 in these counties to increase the deer herd populations in Forest and to maintain it in Vilas and Oneida counties. With these recommendations, it would indicate that the WDNR believes these deer populations are not problematic. Also, managing white-tailed deer below 20 deer/sq mi is recommended to avoid significant impacts on forest vegetation (McGuinnes and deCalesta 1996). It has also been shown that herbivory rates declined precipitously as the amount of early successional habitat increased. Miller et al. (2009) conclude that providing approximately 14% of an area in well-distributed, even-aged managed forests can have substantial impacts on reducing herbivory rates.

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125, ELPC	ELPC states (p. 20): "…roads ostensibly closed often remain accessible to motorized vehicles." ELPC states (p. 21): "Thus, once again we urge the Forest Service to follow its mandate in the Forest Plan and to ensure that decommissioned roads are fully "inaccessible to all motorized traffic, including all-terrain vehicles." "Effectively preventing motorized vehicles from gaining access to any portion of a decommissioned road" might require the Forest Service to "obstruct access at several points along the road." 2004 Forest Plan at 2-36."	The Motor Vehicle Use Map (MVUM) display the CNNF's designated network of roads and trails for public motor vehicle use. The MVUM is the tool for knowing where the public can legally operate a motor vehicle. Road decommissioning strategies vary depending on the terrain and vegetation. Gates, large rocks, earthen berms, and vegetation such as stumps and logs are methods of road closures or decommissioning. Recent contracts for road decommissioning have included reclaiming the first 300 feet; observation in the field have shown this to be successful and resulted in limited unauthorized vehicle traffic. Utilizing the CNNF Forest Plan, all reasonable and fiscally responsible efforts are done to ensure the closure or decommissioning of roads so it is apparent for the user but the MVUM is the legal tool for law enforcement to enforce. Site-specific decommissioning plans will be made prior to implementation. Additional information on CNNF road closure procedures can be found in the Forest Plan (2-36).
125, ELPC	ELPC states (p. 21): "…Fourmile DEA also fails to address the issue of increased intensity and frequency of road use following reconstruction activities. In many cases across the CNNF, low use roads that are not maintained are reconstructed to levels that allow for much more use at higher speeds and greater frequencies with all the associated disturbances and impacts that occurs with roads that are easier to travel…. Forest Service must address the increased use of reconstructed roads to address adequately the effects of project actions".	A travel analysis was conducted for the Fourmile project and follows the Travel Management Rule (2005) that requires each National Forest and Grassland to designate those roads, trails and areas open to motor vehicle use. This rule provides a consistent national policy for motor vehicle access to National Forests and Grasslands. As part of this analysis each road has or is given a maintenance level. Maintenance levels "define the level of service, provided by, and maintenance required for, a specific road. Maintenance levels must be consistent with road management objectives and maintenance criteria." (FSH 7709.59, sec. 62.3). These criteria describe how a road is to be maintained, including requirements for the protection of adjacent resources, desired operating speed and user comfort, acceptability of dust, season of use, type and volume of traffic and the current and future road operation and maintenance strategies.

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		The road construction or reconstruction is done where it is determined to be necessary to accomplish approved resource management activities and meet (not exceed) the maintenance level. Many roads have been degraded over the years and need reconstruction to reshape the surface and restore proper drainage to make them useable again for timber hauling and public use. The amount of reconstruction will vary from repairing a few wet potholes to reshaping the entire road surface, replacing drainage pipes and relocating short portions of a road to fix a safety problem. A total of 51.6 miles were identified as being in need of reconstruction. Further, this project would result in 6.5 miles of hunting hiking trails maintenance, 0.2 mile temporary road construction, 46.4 miles of road reconstruction, 1.0 mile of National Forest System Road closure and removal from Motor Vehicle Use Map (MVUM), 50.7 miles of unauthorized roads added to the National Forest Transportation System as closed to public motor vehicle use, 0.9 mile of unauthorized roads added to the system as open to public motor vehicle use and added to the MVUM, 48.9 miles of road converted to trail, and 147.2 miles of road decommissioning (EA, p. 4).This combined with the 1.2 miles of new construction would still result in a net loss of publicly usable roads with a consequent loss in disturbance levels (Travel Analysis report). Many scientific studies have documented impacts of roads on wildlife, including direct mortality, habitat loss and/or reduced available habitat due to road avoidance, habitat fragmentation, edge effects, increased competition and predation from edge-associated species, population isolation, nesting and rearing disturbances, and reduced habitat effectiveness. All of these impacts can adversely affect the viability and sustainability of wildlife populations. Based on the existing and desired condition for roads, key issues, the answers to questions contained in FS-643, Roads Analysis: Informing Decisions about Managing the

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		National Forest Transportation System, and the value/Risk analysis as displayed in Chapter 7 of the Travel Analysis report. The Travel Analysis report can be found in the project record.
125, ELPC	ELPC is concerned on the impacts to Research Natural Areas (RNAs) and State Natural Areas (SNAs) such as Headwaters Wilderness, Haymeadow Flowage State Natural SNA #482, Franklin and Butternut Lakes SNA #119, Bose Lake Hemlock- Hardwoods Research Natural Area (RNA), and Scott Lake/Shelp Lake SNA #117.	Research Natural Areas (RNA), Management Area 8E, Special Management Areas (SMA), Management Area 8F (including State Natural Areas) were not analyzed. There would be no direct impact as vegetation management/timber harvesting is not allowed in MA E, F & G areas (CNNF Forest Plan 3-51, 3-54, 3-57). Fourmile will follow the Forest Plan and therefore there wouldn't be any indirect effects since management activities adjacent to MA E, F, & G are to be designed to complement their ecological value (CNNF Forest Plan 2-4). There are areas within this project area that are bordering but not in Management area 8E (Research Natural Areas). This management area is defined as an Existing Research Natural Area (RNA). No timber harvesting is allowed within the RNA except for if the desired vegetation type would be lost or degraded without treatment. All stands being proposed near RNAs have been prescribed treatments for meeting those guidelines while still meeting the guidelines of their actual management area. Design management activities adjacent to research natural areas, special management areas, and old growth areas to complement their ecological values (CNNF Forest Plan 2-4).
125, ELPC	ELPC is concerned on the clearcut size deviation proposed for the Fourmile project as Alternative 2 includes a minor variation from a Forest Plan guideline (p. 2-4) (i.e. clearcutting over 40 acres).	The Alternative 2 proposed variation would not require a Forest Plan amendment. Deviating from the Forest Plan guidance of no clearcutting over 40 acres was pursued through a request to the USFS Region 9 regional office to treat over mature aspen, increase forest health, and meet Forest Plan desired future conditions; approval was granted in March 2020.

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		This requested treatment would retain aspen populations at a level which is prescribed in the Forest Plan (i.e. lower amounts of older, dying aspen, and increase younger aspen that is beneficial for many wildlife species like ruffed grouse and golden-winged warbler). For the Fourmile project, clearcutting these areas would meet the need to promote healthy aspen stands and aid in moving the project area's age class distribution toward Forest Plan desired conditions. Specifically, there are eight aspen or mixed aspen, paper birch, and balsam fir stands that would be combined to create four harvest units greater than 40 acres in size (see Table EA-2). These forest stands need harvest treatment to meet the purpose and need of this project. To ensure the Forest Service minimizes forest fragmentation (maintain forest connectivity) and still resolves the issue of forest resiliency in the Fourmile project area, it is necessary to create temporary openings that exceed 40 acres in certain areas. The Forest is allowed to create temporary openings greater than 40 acres after project level analysis, 60 days of public notice, and review and approval by the Regional Forester. The effects of this Forest Plan guideline deviation are described in the vegetation section, Section 3.4 of the EA, under the analysis of Alternative 2. Also, throughout Chapter 3 of the EA, effects to other resources like wildlife, soils, and recreation are outlined; more detail is contained in the resource reports in the project record. If the Forest Service were not able to deviate from this guideline, these large clearcuts would be sub-divided by approximately 10-acre leave areas or aspen shelterwoods (underplanting white pine for regeneration). These leave areas would add up to approximately 60 acres. However, approval was granted by the

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		region 9 Regional Forester to create the 40-acre or larger openings in March 2020.
125, ELPC	ELPC expressed concerns on the proposed Red Pine thinning.	Many red pine plantations within this project area were planted by the Civilian Conservation Corp (CCC). This effort was to help reforest the landscape after the great cut over. Many of these plantations were not placed in areas typically known for red pine often referred to as planted "off site". However, since red pine was easy to plant, cheap, and readily available, this was the primary species planted. When red pine is planted on where it normally doesn't grow, it tends not to do as well (less growth, less resistant/resilient to insect and disease issues, and reaches its culmination age sooner) in the long term as it would have if it was planted on an optimal site (such as soil type) for growing conditions of the species. Due to this issue, some red pine plantations are proposed to for final harvest in the Fourmile project area. The Forest Plan shows on page 2-4 that the minimum rotation age for red pine is 50. The Forest Service usually harvests red pine stands at the standard rotation age (100) or the extended rotation age (175); however, due to the planting of red pine on off-sites, there may be a need to harvest slightly before this standard rotation age but still older than the minimum rotation age. The silviculturist will make a recommendation on whether to thin the stand or give it a final harvest based on a site visit to the stand. If the silviculturist feels that it is in the best interest of the stand to receive the final harvest, they will recommend to the rest of the specialists a change of prescription. Additional environmental review will be completed if this action is taken.

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This change in prescription may occur on as many as 1,327 acres of red pine stands within the project area. This number was determined based on the number of red pine stands, over the age of 80, within the Fourmile project area, that Alternative 2 proposes receive a thinning treatment.

Vegetation Report Table 1: Red Pine Age Class Distribution within the Fourmile Project Area based on various scenarios

<table>
<tr><th colspan="5">Red Pine Age Class Distribution within the Fourmile Project Area</th></tr>
<tr><td>Red Pine Age Class</td><td>Desired Condition</td><td>Existing Condition</td><td>After Alternative 2 Implemented Condition</td><td>If all Red Pine stands over 80 received a final harvest** (that were in the original proposed action)</td></tr>
<tr><td>0-20</td><td>10-20%</td><td>1%</td><td>6%</td><td>40%</td></tr>
<tr><td>21-60</td><td>25-35%</td><td>32%</td><td>31%</td><td>31%</td></tr>
<tr><td>61-100</td><td>25-35%</td><td>52%</td><td>50%</td><td>16%</td></tr>
<tr><td>101+</td><td>20-30%</td><td>14%</td><td>13%</td><td>13%</td></tr>
</table>
** This is the worst case scenario. These numbers are based on what would occur if every single red pine stand over age 80, under the proposed action would receive a final harvest. This scenario is extremely unlikely, (all stands need the final harvest)
</td></tr>
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		so these numbers will be a less dramatic change than what is shown. Further information can be found in the Vegetation Report in the project record.
125, ELPC	ELPC states (p. 22-21): "Forest Service used remote sensing data from 2005 to delineate landcover, supplemented by Wisconsin DNR land management data from 2017… remote sensing data does not provide the level of detail necessary for full analysis of impacts and therefore fails to meet NEPA standards. Even when coupled with data from WDNR… assessing the direct, indirect and cumulative effects of private land activities on NFS lands within the project area cannot be completed accurately and with sufficient detail… [the] Forest Service assumes no suitable habitat for RFSS and TES is present on these private lands, activities on private lands can affect habitat quality on NFS lands. Forest Service must enumerate and analyze effects of private land activities and management on sensitive management areas and other NFS lands and waters in the project area".	The Forest utilized best available information when compiling GIS layers and remote sensing. Direct, indirect, and cumulative impact analyses (including past, present, and reasonably foreseeable future actions) on public and private lands have been analyzed. Each resource considered the activities and events that were or would be relevant to that resource and habitat. Results of those analyses are contained in Chapter 3 of the EA, by resource. Additional detail is available in the resource reports in the project record including in the BE (p.15-17) Resource Indicators and Measures: Methodology, Spatial and Temporal Context for Effects Analysis – Non-Forest Service Lands. Furthermore, analysis of suitable habitat (BE p. 95) did find potential habitat for RFSS plants does occur on non NFS lands. Of the 11,206 acres of non-NFS lands within the Fourmile project area, 2,157 acres are upland hardwoods with potential habitat for RFSS plants with a northern hardwood habitat affinity. Of that potential habitat, 131 acres are managed by the State of Wisconsin Board of Commissioners of Public Lands (WI BCPL) and 433 acres are enrolled in the Managed Forest Law (MFL) program. Assuming these lands are managed for uneven-aged conditions on a fifteen-year rotation, 376 acres (66%) of these lands have closed canopy conditions favorable to RFSS plants with a northern hardwood habitat affinity. This calculation assumes the adjacent lands under other ownership are evenly distributed within the 15-year rotation cycle and treatments occurring on these lands result in a five-year period of unsuitability and this habitat is assumed to contribute to the surplus of habitat in the area.

Leach	Forested landscapes are complex, dynamic, ecological systems involving countless interacting variables. It is impossible to account for every variable. Therefore, scientists seek to identify the most important variables for aiding understanding. Often, we are forced by practicality to employ surrogate variables that can be measured as a sort of stand-in for the variabilities we really want to know. For example, we really want to know year-to-year population numbers of forest-interior bird species. What we measure, typically, are early morning bird vocalizations heard by experts for a few minutes at scattered points. Clearly, the collected data is not identical to the actually forest-wide population. The difference between the measured variable and the intrinsic variable is a kind of error. Scientists strive to understand the error, so that analysis appreciates the amount of error, and its interpretation takes this fulling into account. A chronic problem with forest plans and project-level analyses is the failure to recognize sources of error in the conceptual logic used.	As the commenter states, "… we are forced by practicality to employ surrogate variables that can be measured as a sort of stand-in for the variables we really want to know." We are using the best available scientific information and data. While we may always wish we have more data, we have to use what is currently available. For example: Each RFSS was reviewed for new information. This review included consultation with local and state experts, new literature, and how the scientific information was used in the development of the 2004 Chequamegon-Nicolet National Forest Land and Resource Management Plan (forest plan). Considering the best available and most recent scientific information, the relevant factors for each species were determined. Models were developed to apply available data to this best available science so that determination of suitable habitat could be spatially and temporally assessed (St. Pierre, M., 2010). These models include a description of suitable habitat, both in qualitative terms and the Forest Service's Vegetation (FSVeg) database which describes forest cover or vegetation type, size, density, and year of origin. The habitat variables of forest type, age of the stand, and canopy cover were chosen because they represent the larger suite of variables (including tree height, stand basal area, amount of large woody debris and snags) that are related to species' habitat preferences. Different forest types are defined by the tree species diversity within the stand. The age of the stand is correlated with the structural complexity of the stand; older stands have more structure (downed wood, snags, trees of variable height, etc.) It is recognized that the relationships between stand age and these other variables may not be linear but they are positive height (Carmean, W.H., J.T. Hahn, R.D. Jacobs., 1989), large woody debris in 40+ year old stands (Gore, J.A. and W.A. Patterson III, 1986). The outcome of a review of the literature resulted in setting an age cut-off (50 years) by which time it is expected that the tree heights and diameters, and LWD accumulation have exceeded the minimums suggested in the literature for a number of species

		with an affinity for mature hardwood forest (such as red-shouldered hawk and American marten). Additional variables such as slope, the density of predators, the amount of tip-up mounds in the stand, a fragmentation metric, patch size and proximity to water either could not be included in a habitat model because no data exists or, if included in the model, any threshold (e.g. minimum patch size) criteria would have been poorly linked to the biology of these species on the CNNF. Furthermore, the potential gains in the accuracy of the models would have been undermined by our guesses at the values of these habitat components for which we have no data on the species' minimum requirements or maximum tolerances. For red-shouldered hawks canopy closure was an important variable in determining the suitability of habitat such that greater canopy closure is better for the species. In an analysis of the habitat currently being used by these species on the CNNF, 80% emerged as an appropriate threshold for canopy closure and it is consistent with the habitat use of these species elsewhere in North America. In conclusion, the Forest Service agrees and recognizes that the data, methods, and interpretation used for our analysis may not be the only way to analyze (or interpret) the effects or a resource concern from the project activities. Our specialist conduct a "hard look". We strive to demonstrate that our predictions and judgments are reasonable and supported by describing the methodologies behind the analysis, explain why we used certain models/methodologies/data sets, and demonstrate the reliability, soundness and accuracy of data sets and methodologies.
131.02	I am afraid that that sort of adherence to inadequate analysis is part of the Forest Service culture. It is, I suspect, an awareness of that culture which led the FS to not conduct an environmental impact study, which would provide more clarity on the assumptions regarding measured and intrinsic variables.	The purpose of an environmental assessment is to briefly provide sufficient evidence and analysis, including the environmental impacts of the proposed action and alternative(s), to determine whether to prepare either an EIS or a FONSI (40 CFR 1508.9). An EA is about supporting a determination as to whether the proposal may result, or will not result in significant environmental effects and whether an environmental impact statement is warranted. The CNNF chose to start the environmental review process as an EA due to the history the Forest has conducting environmental analysis for similar type projects and no significant

		impacts have been found in these past environmental reviews. The difference between an EA and an EIS is not how rigorously the analyses are done, although EISs are often longer than EAs. The amount of attention devoted to a given impact increases with the complexity of the proposal and the potential for significance. Impacts shall be discussed in proportion to their significance (40 CFR 1502.2[b]) and NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1).
131.03	Another factor of Forest Service culture, as revealed in this DEA, is the discounting of the landscape composition and structure objects included in the 2004 CNNF Forest Plan. That plan incorporated many of the state-of-the-science ideas that emphasized large blocks of interior forest (including management areas 2A, 2B, and 3B) and large areas of pine communities (Management Area 4B). The DEA, however, contains little analysis of how the proposed actions further those objectives.	The Forest conducted a preliminary analysis for "Mature northern hardwood interior forest" and "Mature red/white pine forest" that showed proposed management effects were minimal on landscape composition of the Management Areas. Since impacts shall be discussed in proportion to their significance (40 CFR 1502.2[b]) and NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1), no further analysis was warranted. For example, the preliminary analysis concluded: 1) Mature northern hardwood interior forest (MNHIF): On the Eagle River / Florence Ranger District (ER/FL) there is 120,753 ac. of MNHIF, 124,406 ac. in the Lakewood/Laona Ranger District (LK/LA) and 245,159 ac. in the Nicolet side of the CNNF. In the Fourmile Project area, there is 3,787 ac. and of these acres here is 1,602 ac. (1% of ER/FL) that have proposed timber harvest treatments. Only 78 ac. (0.06% of ER/FL and 4.8% of project area) of those stands have prescriptions that will result in those stands no longer being classified as MNHIF due to reduction in canopy closure. As a result, 95% of the MNHIF project stands with harvest treatments would maintain a closed canopy, age, forest type, improve the quality and accelerate their growth and therefore remain classified as MNHIF consistent with the landscape composition of the Forest Plan.

		2) Mature red/white pine forest (MRWPF): On the ER/FL there is 51,535 ac. of MRWPF, 51,551 ac. in the LK/LA and 103,086 ac. across the Nicolet side of the CNNF. In the Fourmile Project area, there is 6,106 ac. and of these acres there are 3,164 ac. (6 % of ER/FL) that have proposed timber harvest treatments. Only 220 ac. (0.4% of ER/FL and 3.6% of the project area) of those stands have prescriptions that will result in those stands no longer being classified as MRWPF due to reduction in canopy closure. As a result, 96% of the MRWPF project stands with harvest treatments would maintain a closed canopy, age, forest type, improve the quality and accelerate their growth and therefore remain classified as MRWPF consistent with the Landscape composition of the Forest Plan. Fourmile, in accordance with the Forest Plan, addresses several needs to achieve desired conditions of the forest, the proposed actions meet the Forest Plan objectives of landscape compositions. Management Areas (MAs) 1-4 are treated through the Fourmile project to convert these MAs to the desired conditions as listed in the Forest Plan. There is no 3B MAs designation within the Fourmile project. The proposed action modifies many of the age class distributions and species compositions in many forest types, including MA 2A, 2B, and 4B (Table 11-12, p. 23-24 vegetation report). These changes better reflect what the Forest Plan lays out of what we should have in the district. Additionally, the Forest Plan calls for uneven-aged structure for mixed northern hardwood on a good chunk of the forest (Forest Plan p. 2-8 through 2-9) but more intensely within Management Areas 2A, and 2B (Forest Plan p. 3-7 through 3-9). The even-aged and two-storied stands currently do not meet Forest Plan desired structure conditions. The desired condition of these

		hardwood stands is to develop uneven-aged structure which can be done with improvement or selection harvests. MA 4B is described as Natural Pine-Oak. The area is dominated by natural pine and oak. Large patch conditions are restored or maintained. Timber harvest and fire is often used to regenerate pine and oak. In the absence of natural disruptions to reinvigorate 4B areas, thinning is utilized to allow pine to thrive and return the area to historical conditions. Current conditions in the Fourmile 4B areas have an overabundance of aspen and northern hardwoods which are limiting the Pine communities (Table 3, p.12 vegetation report).
131.04	The main objections I have to the DEA is a serious flaw in its logic and the fact that the subsequent analysis leads to projects that will adversely impact species and biological systems in the short and long term. Instead of dealing directly with how proposed actions would be expected to directly and indirectly affect biological diversity and particular species of concern, the analysis views almost all of the relevant ecology through the single lens of a two-state variable: "suitable habitat" or "non-suitable habitat." This is clearly revealed in the key statement at the beginning of section 3.2 (page 22): "Issue: The proposed harvesting, site preparation, and road reconstruction and construction may decrease the viability of some plant TES and RFSS by temporarily reducing the amount of suitable habitat available to them." Clearly, the FS relies heavily, if not exclusively, on its "habitat suitability" models.	The Fourmile BE analysis did include direct affects to TES/RFSS. Examples of this are individual plants being trampled during project implementation, cutting down of RSH, goshawk or bald eagle nest trees, destruction of milkweed plants and/or Monarch butterflies in wildlife openings, driving over wood turtles with harvest equipment or destruction of their nesting site. These direct impacts to individuals and occupied habitat are avoided through mitigation measures and/or project design features (no-activity, no disturbance buffers, seasonal harvesting restriction, and maintaining canopy closure at or above 80%). The Biological Evaluation for the Fourmile project (BE) also looked at indirect affects to TES/RFSS by analyzing how their suitable habitat could possibly be made unsuitable by proposed management activities. This process was presented in the BE on page 15 in the section "Methodology, Spatial and Temporal Context for Effects Analysis". It was also part of each TES/RFSS write up when that data was available. Changes to the availability of suitable habitat result from short and long-term effects from the proposed action as habitat can be created, temporarily lost, and lost for the foreseeable future. A direct effect occurs when individual plants are trampled during project implementation, or when occupied habitat is made

		unsuitable by management. Direct impacts to individuals and occupied habitat are avoided through mitigation measures and/or project design features (no-activity, no disturbance buffers, seasonal harvesting restriction, and maintaining canopy closure at or above 80%). Direct effects are determined for each individual species in the Biological Evaluation Resource Report for the Fourmile Project. An indirect effect occurs when actions make otherwise suitable unoccupied habitat, unsuitable. Changes to the availability of suitable habitat result from short and long-term effects from the proposed action as habitat can be created, temporarily lost, and lost for the foreseeable future. Indirect effects are determined for each individual species in the Biological Evaluation Resource Report for the Fourmile Project. In addition to the "habitat suitability models" to determine effects to TES/RFSS the Fourmile BE analysis included correspondence with Fish and Wildlife Service, WDNR and FS staff, WDNR Natural Heritage Data, local researcher and their data, FS survey data and information contained in research papers (published and unpublished).
131.05 Leach	When the EA reports on the FS's analysis of the proposed project effects on individual plant species, a curious assertion is repeated, the impact on the plants caused by a reduction in "suitable" habitat "dissipates within five years." This analysis fails completely to address the pertinent question of the impact logging has on populations of plants. The implication is that during the up-to five years that the habitat is not suitable, the plant populations cease to exist. But when "suitability" returns, what is the likelihood of recolonization? A reasonable argument can be made that the answer is "Highly unlikely." Therefore, claims that "suitability" returns are pointless.	This habitat analysis does not assume colonization of temporarily unsuitable habitat by RFSS plants five years following implementation of the proposed action. Direct impacts to individuals and occupied habitat are avoided through mitigation measures and/or project design features (no-activity, no disturbance buffers, seasonal harvesting restriction, and maintaining canopy closure at or above 80%). Occupied stands are assumed to remain suitable following implementation due to theses mitigation features and/or project design features. The remaining effects are limited to the modification (gain or loss) of habitat, which is often the only meaningful effect. An area can be dichotomously categorized as either suitable habitat or unsuitable habitat. Habitat can be created, temporarily lost, and lost for the foreseeable future through past, present, and

		reasonably foreseeable actions. Changes to the availability of suitable habitat result from short and long-term effects from each vegetation management project and from in-growth and out-growth of habitat resulting from the natural aging of stands. Consequently, the amount of suitable habitat can be quantified and, given information on foreseeable future actions, forecasted at spatial scales from a single stand up to the entire Chequamegon-Nicolet National Forest. Determining temporarily unsuitable habitat is essential in evaluating cumulative effects temporally and spatially at the project, landbase, and forest scales.
131.06 Leach	The analysis also doesn't address the very notion of "suitable." Most of the FS analysis seems to take the measurable variable "percent canopy" as a surrogate for many other important factors. But without a better understanding of the ecological requirements of each of these plants, in each of its life stages, it is impossible to know whether "suitable" as determined by "percent canopy" is at all meaningful.	Suitable habitat for the individual RFSS plant species is defined in the Biological Evaluation Resource Report for the Fourmile project (p.96). "The Forest Service developed habitat models to analyze the impacts to RFSS, which were also used to determine stands with suitable habitat. These habitat models are based on known habitat characteristics and species conservation assessments … Suitable habitat for most RFSS plants with a northern hardwood habitat affinity is defined as northern hardwoods (FS VEG codes 81 to 89 with a size density code of 6 or 9) with closed canopy conditions. The minimum stand age for little goblin moonwort and bluntlobe grapefern is 70 years, 65 years for spreading woodfern, and 50 years for Mingan moonwort and American ginseng." This habitat analysis uses those characteristics where the Forest Service has measurable and available data and include vegetation type (FS VEG Code), structure (size density class), and canopy cover (stand age). These coarser habitat characteristics have been determined to be relevant, surrogate variables for finer habitat characteristics Species Viability Evaluation (SVE) panelists determined relevant variables for each RFSS (such as microtopography, developed duff layer, etc.). Thus, canopy cover is only one of several characteristics used to denote suitability.
131.07 Leach	An additional problem that makes this section of the DEA impossible to evaluate is the expressed notion that (p. 22),	Design features for individual RFSS plant species are listed in the Biological Evaluation Resource Report for the

	"There are no direct effects to bluntlobe grapefern due to design features." The reader is not told what are the "design features." Botrychium species have not been widely studied. There is scant knowledge on what may negatively harm a population, yet the undefined design features, we are told, will eliminate any "direct effects."	FourmileProject. From page 108 of that document, "Bluntlobe grapefern occurrences within stands proposed for treatment would be protected by a 250 foot no activity, no disturbance buffer reducing the potential for direct impact. Occupied stands would also be harvested during frozen ground conditions, to reduce potential impacts to undocumented bluntlobe grapefern sites. Direct effects to bluntlobe grapefern occurrences would be minimized due to these design features." While there is a lack of scientific information on bluntlobe grapefern (Botrychium oneidense), scientific information is more readily available for little goblin moonwort (B. mormo). Since bluntlobe grapefern often occurs in a genus community with other Botrychium species, including B. mormo, it's reasonable to use B. mormo as a surrogate. According to the Conservation Approach for Goblin fern (Botrychium mormo, W. H. Wagner), "Activities which could disturb Botrychium mormo plants, their habitat, or microhabitat should not occur within 250 feet of B. mormo populations … site disturbing activities should occur only during frozen ground conditions … a minimum canopy closure of 70% should be maintained." Canopy Cover requirements for goblin fern were recommended to be 80% in Population Viability Assessment (PVA) panels convened during the CNNF Forest Plan revision in 2004.
131.08 Leach	Similarly, the variable "suitable habitat" or "not-suitable habitat" is the keystone variable for the analysis regarding population trends for animal species. This is expressed in the first sentence of Section 3.7 (p. 27): "Issue: The proposed harvesting, site preparation, and road reconstruction and construction may decrease the viability of some wildlife TES and RFSS by temporarily reducing the amount of suitable habitat available to them." However, the biological link between FS's "suitable habitat" and actual population size is at best tenuous. In the discussion of Red-shouldered Hawks (p. 27), the DEA	The Forest Service Manual (2670.5) defines sensitive species as those plant and animal species identified by a Regional Forester for which population viability is a concern (not strict population numbers), as evidenced by significant current or predicted downward trend in numbers, density or habitat capability that would reduce a species' existing distribution. The Forest Service (FS) is responsible for protecting all federally proposed and listed species and the Regional Forester Sensitive Species (RFSS). Each RFSS was reviewed for new information. This review included consultation with local and state experts, new literature, and how the scientific information was used in the development of the 2004 Chequamegon-Nicolet National Forest Land and

	claims there are 15,217 acres of suitable habitat, but the hawks are “uncommon visitors” with no known nesting sites. This should be an immediate red flag for evaluating all the claims of a relationship between “suitable habitat” and population status. If so much “suitable habitat” is unoccupied for this species, why would a reasonable person expect the validity of any of the other claims regarding population security within “suitable habitat”? The brief discussion of the America marten, as is the case with the other species, depends entirely on the acreages of so-called “suitable habitat.” Since I am familiar with some of the research on the marten, I want to point out why it is unreasonable to expect acreage of “suitable habitat” to be an ecological determinant of population numbers. As I reported at the opening of this letter, even Forest Service ecologists have claimed marten decline is not due to lack of “suitable habitat”, but the consequence of other, presumably unknown factors.	Resource Management Plan (forest plan). Considering the best available and most recent scientific information, the relevant factors for each species were determined. The outcome of a review of the literature resulted in setting an age cut-off (50 years) by which time it is expected that the tree heights and diameters, and LWD accumulation have exceeded the minimums suggested in the literature for a number of species with an affinity for mature hardwood forest (such as red-shouldered hawk and American marten). Red-Shouldered Hawk (BE report): There are no known nesting red-shouldered hawks within the project or 1-mile buffer area. However, preferred habitat for red-shouldered hawks is mature hardwood forest, especially those found in riparian areas, wet or moist forest and upland forest adjacent to ponds, wetlands or swamps. Nest trees most commonly used are American beech, maple, oak, and birch. In the effects analysis for red-shouldered hawks, suitable habitat is defined as northern hardwoods (CDS codes 81-89) and hardwoods with hemlock (type 20), northern red oak (type 55), and lowland hardwoods (types 71, 76 and 79). The CNNF Regional Forester’s Sensitive Species (RFSS) Risk Evaluation (Adams & Matthiae 2000) listed Red-shouldered Hawk (RSH) abundance as rare, but it might be locally common in prime habitat. The Nicolet side of the CNNF has identified 75 nest sites and an estimated population of 200-250 breeding pairs. It has been estimated that only one-half of Nicolet side has suitable RSH habitat. (Jacobs and Jacobs, RDH CA 2002, p. 21). The northern section Nicolet side of the CNNF as well as the Upper Peninsula of Michigan, is the northern limit for the RSH’s range. John Jacobs RDH research data shows reproduction is generally low for much of northern Wisconsin and more specifically on the Nicolet side. This is possibly due to mortality rates being low in that area resulting in a stable population with reproduction replacing annual mortality. Mortality rates are much more difficult to measure than reproduction rates (J. Jacobs, 2018). Another factor for this could be related to the shorter

		growing season. RDS's would not be expected to reproduce as well at the extremities of this breeding range. (J. Jacobs, 2001). The 30 plus years of monitoring on the Nicolet side of RDH nesting territories supports the contention by Jacobs, that the nesting cohorts remains stable with similar to higher reproductive success than reported by Woodford et al (2008) on the Menominee Tribal lands in Menominee County. Also, nesting habitat is still a critical issue for RSH, but weather, available food- especially frogs, and predation on eggs, nestlings and females at the nest seem to be the most immediate factors that affect their population. For example, 12 nests failed mostly from predators in 2017 (Jacobs 2017). In 2018 the spring was very cold and snowy that caused nesting to be very late and possibly caused nests to fail and/or birds to not nest at all (Jacobs 2018). In 2018, Jacobs stated that the RSH population are still stable but tenuous on CNNF with 200-250 breeding pairs (Jacobs, 2018). This project area lies within the northern most portion of the RSH's range on the CNNF. Because of that we would anticipate more suitable habitat to be available than is occupied by a species that is considered to be on end of its range in this portion of Wisconsin American Marten (BE report): In addition to habitat analysis we also incorporated WDNR/FS marten survey research conducted over the past 5 years on the District to document occupied/unoccupied areas. This data allows us to implement Management Standard and Guidelines from our Forest Plan which are as follows: • Within areas determined to be occupied by marten (see Glossary for definition of American Marten occupied areas) do the following: 1) Leave 15-25% of potential timber salvage unharvested following large disturbance events (greater than 100 acres) except in salvage situations determined high risk to human safety and/or forest health.

		2) Incorporate Management Area 2B Reserve Tree Guidelines (Chapter 3) relative to tree numbers and diameters to even and uneven-age managed stands, where existing tree diameters allow. As examples, additional variables such as slope, the density of predators, the amount of tip-up mounds in the stand, a fragmentation metric, patch size either could not be included in a habitat model because no data exists or, if included in the model, any threshold (e.g., minimum patch size) built into the model would have been poorly linked to the biology of these species on the CNNF. We also analyzed the effects of proposed road management (decommission, new construction, reconstruct and conversion to trail) to marten in the BE. Population numbers are controlled by several factors. The Forest Service marten model determination of suitable habitat is to analysis where marten can be expected to find the best habitat conditions for the species. Project analysis determined that within the project area there is 18,192 acres of suitable marten habitat and at the District and Nicolet National Forest levels are 155,391 and 315,423 acres respectively (Table 22 - Fourmile BE).
131.09 Leach	An obstacle to properly evaluating the logic within this DEA is the lack of definitions: what makes some place “suitable habitat” for a species and other areas “not-suitable”? My assumption, as I have never heard otherwise, is the FS continues to use the same methods it used years ago; namely, it designated certain cover types used in the FS’s Geographic Information System (GIS) as “suitable.” The basis for this designation is not revealed.	Suitable habitat for the individual RFSS Plant species is defined in the Biological Evaluation Resource Report for the Fourmile Project (pg.96). “The Forest Service developed habitat models to analyze the impacts to RFSS, which were also used to determine stands with suitable habitat. These habitat models are based on known habitat characteristics and species conservation assessments … Suitable habitat for most RFSS plants with a northern hardwood habitat affinity is defined as northern hardwoods (FS VEG codes 81 to 89 with a size density code of 6 or 9) with closed canopy conditions. The minimum stand age for

		little goblin moonwort and bluntlobe grapefern is 70 years, 65 years for spreading woodfern, and 50 years for Mingan moonwort and American ginseng". Suitable habitat for the RFSS animals is defined in the BE Resource Report for the Four Mile Project. An overall description of the development of the suitable habitat models can be found on page 15. In addition to this, species suitable habitat details are presented within the "Measures" sections of their individual write ups. The Species Viability Evaluation (SVE) process for the CNNF Forest Plan revision in 2004 included consultation with local and state experts and the review of new and existing literature/scientific information as it pertained to RFSS. SVE panelists considered the best available and most recent scientific information and determined the relevant variables for each RFSS. The Forest Service determined which variables it had measurable and available data on that could act as a relevant surrogate for the finer variables determined by the SVE panel. This coarser data includes vegetation type (FS VEG Code), structure (size density class), and canopy cover (stand age). Currently the Forest Service is continuing to work with researchers at GLIFWC, UW-Madison and others to evaluate our assumptions about what is suitable habitat vs. not suitable habitat for marten. Our models are adjusted as determined with best available science on the species for our area.
131.10 Leach	There are at least two serious flaws with this approach. First, the variables that are most important to the species may not be highly correlated with cover type. American martens prefer "messy" forests with much variation in tree size, including large yellow-birch, scattered thickets, and large amounts of coarse woody debris. As far as I know, the FS has not conducted an analysis of how well these variables map into the FS's stand types and the designated areas of "suitable habitat".	Marten habitat variable like tree size and coarse woody debris were incorporated into the effects of suitable marten habitat. They are within the following WDNR Best Management Practices (BMPs) that the FS follows for suitable marten habitat with even-aged and uneven-aged management goals (WDNR, 2016e): a) Hemlock/Cedar pockets (a pocket is <2 acres): Encourage no harvest in these pockets, but allow removal of individual aspen, paper birch, and red maple trees. (Note: forest stands of hemlock and white cedar are suitable habitats). b) Tree retention: Follow existing guidelines for green tree retention, snags, wildlife, and mast trees. Ten percent of

		the retained trees should be living wildlife trees ≥20 inches dbh, if present (Note: wildlife trees can include hollow or sound, live trees). c) Woody debris: Design transport and removal paths to minimize crushing tree tops, limbs, and other woody debris. The vertical structure provided by post-harvest slash may provide an important habitat component for American martens. d) Travel corridors: Consider maintaining travel corridors to avoid isolating suitable American marten habitat. Travel corridors are forested areas that connect one area of suitable habitat to another area of suitable habitat. e) In addition, for forest stands with uneven-aged management goals: i. If the average stand diameter is ≤11 inches dbh, then maintain a minimum average residual basal area of 70-90 ft^2/acre across the stand. ii. If the average stand diameter is >11 inches dbh, then maintain a minimum average residual basal area of ≥85 ft^2 basal area/acre across the stand Also, FS Standard and Guidelines for marten habitat incorporate Management Area 2B Reserve Tree Guidelines relative to tree numbers and diameters to even and uneven-age managed stands, where existing tree diameters allow (FS Plan; p3-10 and 3-11). Biological Diversity MA 2B: 1. Convert most aspen stands to long-lived tree species. 2. Reserve tree or reserve island guidelines may be used to establish areas or exclusions within timber sale units for restoring or maintaining special or unique habitats. MA 2A and 2B: 1. Retain long-lived conifers and hardwoods as reserve trees within aspen clearcuts. Where long-lived trees are not present—retain short-lived conifers if they are available.

		2. Maintain white pine and hemlock within 300 feet of rivers with a bankfull width of 50 feet or larger. 3. Increase closed canopy continuity within northern hardwood blocks. Increase the average patch size of northern hardwoods by converting aspen inclusions within the larger northern hardwood blocks. Reserve Tree Guidelines for Uneven-Aged Managed Stands: MAs 2A and 2C: Reserve 3 to 7 live trees per acre larger than 11 inches. Focus on the largest trees available. MA 2B: 1. Reserve 4 to 9 live trees per acre larger than 11 inches. Focus on the largest trees 2. Develop and retain trees over 24 inches in diameter to increase the probability of natural gap formation and tip-up mounds. The number of reserve trees over 24 inches in diameter should be included within the 4-9 reserve live tree total. Large (over 24 inches) basswood, ash, yellow birch, and red oak are preferred for retention. MAs 2A, 2B, and 2C: Emphasize the retention of long-lived conifers such as hemlock and white pine (as a component of the reserve live tree numbers). In addition, reserve other tree species that are not well represented in the stand or on the Forests (yellow birch, paper birch, red oak, white oak, American beech, etc.).
131.11 Leach	Secondly, the “suitable habitat” polygons within the GIS are considered independent of each other, as if each were wrapped by an impermeable barrier. However, external ecological factors often affect forest interior species, such as the marten, many ground nesting birds, and many plant species. This is why conservation biologists have asked the FS for decades to increase the size of blocks of forest, so that larger areas are less affected by edge-effects and	The Forest Plan includes management to increase the size of forested blocks of habitat. Forest Plan: P. 3-11: Guidelines for Management Areas 2A, 2B, and 2C (MA2A and MA2B) Increase closed canopy continuity within northern hardwood blocks. Increase the average patch size of northern hardwoods by converting aspen inclusions within the larger northern hardwood blocks. P.3-20 Guidelines for Management Areas 4A, 4B, and 4C

	the penetration of forests by essentially non-forest species is decreased. In the case of the marten, the closer they are to a forest edge, the greater the likelihood of being predated by a fisher. But closeness-to-forest-edge is an important variable not considered in the DEA.	(MA 4B) Increase closed canopy continuity within pine-oak blocks. The WDNR Marten Plan states (2011) that high percentage of canopy closure is a habitat feature provided by mature forests and that this closed canopy likely provides a lower risk of predation to martens than open areas. Research in Wisconsin has shown that marten establish their home-ranges that contain significantly more highly used cover-types like mature upland hardwoods (Dumyahm et al 2007) and that they select mixed hardwood stands (Wright, 1999). Moriarty et. al. (2016) found that martens avoided stands with simplified structure, and the altered patterns of movement observed in those types of stands may negatively affect the ability of martens to forage without increased risk of predation.
131.12 Leach	It appears, based on the DEA's maps, that the proposed work would decrease the amount of forest interior, decrease the connectivity of forest interior areas, increase the population density of white-tailed deer, fisher, raccoon, opossum, cowbirds, and other non-forest-interior species that can be very detrimental to forest-interior species populations. Yet this very important issue, which conservation ecologists have been raising for decades, is not satisfactorily addressed in the DEA.	The Forest conducted a preliminary analysis for "Mature northern hardwood interior forest" that showed proposed management effects were minimal on landscape composition of the Management Areas. Since impacts shall be discussed in proportion to their significance (40 CFR 1502.2[b]) and NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1), no further analysis was warranted on forest-interior species (besides those that are covered under the BE). For example, the preliminary analysis concluded: 1) Mature northern hardwood interior forest (MNHIF): On the Eagle River / Florence Ranger District (ER/FL) there is 120,753 ac. of MNHIF, 124,406 ac. in the Lakewood/Laona Ranger District (LK/LA) and 245,159 ac. in the Nicolet side of the CNNF. In the Fourmile Project area, there is 3,787 ac. and of these acres here is 1,602 ac. (1% of ER/FL) that have proposed timber harvest treatments. Only 78 ac. (0.06% of ER/FL and 4.8% of project area) of those stands have prescriptions that will result in those stands no longer being classified as MNHIF due to reduction in canopy closure. As a result, 95% of the MNHIF project stands with harvest treatments would maintain a closed

canopy, age, forest type, improve the quality and accelerate their growth and therefore remain classified as MNHIF consistent with the landscape composition of the Forest Plan.

Stenglein and Wojcik (2019) summarize and analyze data on Wisconsin's white-tailed deer population status in 2018. The Fourmile project area is within Forest, Oneida, and Vilas Counties. These three counties are within Wisconsin's "Northern Forest Zone 1". The post-hunt white-tailed deer population estimate decreased 0.5% from 2017 to 2018 in the Northern Forest Zone 1 (Stenglein and Wojcik, 2019). Across the state, post-hunt population size estimates and densities (deer per square mile) were calculated for the DMUs (Deer Management Units) in 2018. Each of the three counties is its own DMU. State-wide, in the 82 DMUs, deer density ranges from 3 to 61 deer/mile^2; with a mean of 27.

Post-hunt Population Estimates of Deer Herd Population Size and Density per Square Mile (Stenglein and Wojcik, 2019).

County & DMU	Post-hunt Population Size	Density of Deer per Square Mile
Forest Forest	17,500	17
Oneida Forest	25,800	21
Vilas Forest	17,500	19
State-wide Total	1,510,400	27

Deer populations are influenced by many factors (weather, baiting, and hunting) that are beyond the control of the FS and thus not dictated solely by aspen management (Quinn et al 2006). Many factors influence the size of a deer population, including, but not limited to: mild to moderate winters in a row; limited antlerless harvest; hunting; predators; food availability;

		disease; etc. Deer populations fluctuate and factors that influence them historically are the following but not limited to: special hunts (T-Zones, Earn-A-Buck), archery and firearm seasons frameworks and success rates, winter weather conditions, predation and current County Deer Advisory Councils (CDAC) recommendations. The Natural Resource Board approved objectives for 2018-19 in these counties to increase the deer herd populations in Forest and to maintain it in Vilas and Oneida counties. With these recommendations, it would indicate that the WDNR believes these deer populations are not problematic. Also, managing white-tailed deer below 20 deer/sq mi is recommended to avoid significant impacts on forest vegetation (McGuinnes and deCalesta 1996). It has also been shown that herbivory rates declined precipitously as the amount of early successional habitat increased. Miller et al. (2009) conclude that providing approximately 14% of an area in well-distributed, even-aged managed forests can have substantial impacts on reducing herbivory rates.
131. 13 Leach	In summary, I attempted to evaluate the underlying logic presented in the biological sections of the DEA. In my opinion, the FS's analysis is seriously flawed, in that it relies heavily on a two-state variable "suitable" or "not-suitable" habitat as a surrogate from a large suite of ecological factors that actually affect populations. No evidence is given that this surrogate variable is valid, or even useful. Its continued use seems to be for convenience, not for taking a hard look at how logging affects forest species. And, the example of the Red-shouldered Hawk (lots of "suitable habitat" but no hawks) reveals what shaky ground the entire DEA rests upon. Other well-known variables that affect populations of forest interior species are not addressed, such as edge effects, population density of white-tailed deer, and changes in microclimate following logging.	More information on the development and use of the models is available in the following documents in the project record: Anderson, Scott, and Justin Bournoville. 2019. Draft Biological Evaluation Resource Report, Four Mile Project. USDA Forest Service, Chequamegon-Nicolet National Forest, Eagle River – Florence Ranger District. St. Pierre, Matthew et al. 2010. Process Paper: Habitat Models for Effects Analyses; Animal RFSS. USDA Forest Service, Chequamegon-Nicolet National Forest. (See pages 3-4, and 4-28 by species) St. Pierre, Matthew et al. 2010. Process Paper: Habitat Models for Effects Analyses; Plant RFSS. USDA Forest Service, Chequamegon-Nicolet National Forest. (See pages 3-6, and 7-20 by species)

131.14 Leach	One final thought, it seems to me that a plan for logging at this scale is worthy of an Environmental Impact Statement. The more rigorous analysis of an EIS should, if done properly, address many of the problems of logic and omission found in the DEA. I urge you to initiate a full EIS that avoids the problems and omissions of the DEA and provides adequate information that would allow proper analysis. An analysis that should be included regards the impacts of proposed work on the State Natural Areas and the Research Natural Areas within the project area.	The purpose of an environmental assessment is to briefly provide sufficient evidence and analysis, including the environmental impacts of the proposed action and alternative(s), to determine whether to prepare either an EIS or a FONSI (40 CFR 1508.9). An EA is about supporting a determination as to whether the proposal may result, or will not result in significant environmental effects and whether an environmental impact statement is warranted. The CNNF chose to start the environmental review process as an EA due to the history the Forest has conducting environmental analysis for similar type projects and no significant impacts have been found in these past environmental reviews. The difference between an EA and an EIS is not how rigorously the analyses are done, although EISs are often longer than EAs. The amount of attention devoted to a given impact increases with the complexity of the proposal and the potential for significance. Impacts shall be discussed in proportion to their significance (40 CFR 1502.2[b]) and NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1). Research Natural Areas (RNA), Management Area 8E, Special Management Areas (SMA), Management Area 8F (including State Natural Areas) were not analyzed. There would be no direct impact as vegetation management/timber harvesting is not allowed in MA E, F & G areas (CNNF Forest Plan 3-51, 3-54, 3-57). Fourmile will follow the Forest Plan and therefore there wouldn't be any indirect effects since management activities adjacent to MA E, F, & G are to be designed to complement their ecological value (CNNF Forest Plan 2-4). The only exception where analysis would be completed was if the Non-Forest Service lands, such as State Natural Areas, fell inside and within a 1-mile buffer outside the project area specifically for red-shouldered hawks that required cumulative effects analysis and for goshawk that are a Management Indicator Species (BE report).

Responses to commenter 33 (Dick Artley) begin below.

Letter #	Public Comments & Questions	Team Responses & Comments
33, Artley	"Ranger Kirschbaum, your IDT has violated one of the most the most [sic] basic NEPA requirements that exist. There are no No Action effects disclosed for Threatened and Endangered Plant Species (TES), and Regional Forester Sensitive Plant Species (RFSS), Visuals or Scenic Integrity, Tree Composition (Species and Age Diversity), Non-native Invasive Plants, Water Resources, Air Quality, Transportation and Public Access and Cultural Resources… Request for changes to be made to the final NEPA document: Include No Action effects for Threatened and Endangered Plant Species (TES), and Regional Forester Sensitive Plant Species (RFSS), Visuals or Scenic Integrity, Tree Composition (Species and Age Diversity), Non-native Invasive Plants, Water Resources, Air Quality, Transportation and Public Access and Cultural Resources".	The analyses requested about effects of Alternative 1, the No Action Alternative, will be summarized by resource in Chapter 3 of the EA put out for the Objection period. More detailed information is in the resource reports in the project record.
33, Artley	"The author of scoping letter #84 said: "After reading the summary of the Fourmile project. I hope herbicide would not be used." Your meaningless, degrading reply to this request is this: "Thank you for letting us know about your herbicide concern. The Forest Service is proposing to possibly use herbicide on three stands (<62 acres), increasing the success of regeneration in those stands. The Forest Service follows many guidelines when using herbicide; these practices are outlined in the Forest's Invasive Plant Control Project Environmental Assessment." … Your response to scoping letter #84 clearly indicates regeneration success is more important than human life… At page 16 Table EA-5 you tell the	The proposed herbicide treatments in the Fourmile project, intended only for research purposes on effectiveness on certain invasive species, have been removed from the proposal after further IDT discussions.

	public you will apply a herbicide to 37 acres. A competent professional would have included this in the description of the Proposed Action and divulged the name of the herbicide… Incredibly, you withhold the herbicide brand name and formulation from the public…If an alternative to Roundup is not used, you and the IDT members who wrote this pre-decisional EA will likely be guilty of setting the stage for the death of someone who visited your forest…"	
33, Artley	"…Ranger Kirschbaum, I ask you and your IDT members to have the courage to read the science conclusions of independent scientists not affiliated with the USFS in the Glyphosate kills attachment. You already know the USDA ignores the independent science that shows glyphosate causes cancer. You also know you are not required to apply herbicides that contain glyphosate."	The proposed herbicide treatments in the Fourmile project, intended only for research purposes of effectiveness on certain invasive species, have been removed from the proposal after further IDT discussions.
33, Artley	: "Request for changes to be made to the final NEPA document: Assure the following quote is included: "herbicides that contain glyphosate will not be used anywhere, at any time, for any reason as part of this project." You know failure to tell the public this chemical will not be applied to vegetation in your forest leaves the door open for you to apply glyphosate. This violates 18 U.S.C. § 1001(c), 40 CFR 1501.2 (b), 40 CFR 1502.16(a) and (b), 40 CFR §1508.27(b)(2), 40 CFR and the Apr. 21, 1997 Executive Order No. 13045… 40 CFR §1508.27(b)(2) because the FONSI intensity discussion will not discuss the lethal nature of this chemical. Indeed, exposing people to a carcinogen is a "significant impact to the human environment." If your final EA still approves the application of glyphosate you will violate NEPA because your FONSI is fraudulent. Even a biased Objection Deciding Officer	The proposed herbicide treatments in the Fourmile project, intended only for research purposes of the effectiveness on certain invasive species, have been removed from the proposal after further IDT discussions. At the time of the draft EA when herbicide was still considered, no decision had been made on which herbicide to use (Glyphosate or other). As no herbicide will be included in the Fourmile project, the requested quote will not be included as it is no longer relevant to the proposed actions.

	would direct you to either 1) prepare an EIS, or 2) use another herbicide."	
33, Artley	"…Table EA-5 at page 15 the pre-decisional EA indicates you plan to clearcut 1.85 square miles. Who are you people?".	The 1.85 miles referenced possibly alludes to the 1,190 acres proposed for clearcut/coppice harvest in Table EA-5. Specifically, 209 acres are proposed for clearcut and 981 acres for coppice harvest to meet the Forest Plan objectives for the management areas and the percentage of early successional forests present within them (Table 20 Vegetation Report; Ch 1-3. Forest Plan). Where regeneration of aspen types, an early successional forest species, is the objective then clearcutting is the optimal method for regenerating fully-stocked stands and maximizing growth as aspen needs full sunlight for vigorous growth and successful competition with shade tolerant species (Perala,1990, p.561). Currently, there is an overabundance of aspen in the oldest age class and there is a lack of representation in the youngest age class in the Fourmile boundaries; approximately 95% of aspen are 21+ years with fewer than 4% 10 years or less. To meet the Desired Future Condition of 15-25% in the 0-10 age class for aspen, approximately 711 acres of aspen need to be regenerated. This acreage should be taken from the 21-45 and 46+ age classes. In the proposed action, however we plan to regenerate more than those acres because of the overabundance of older aspen age classes (Vegetation Report). More information on this can be found in the Vegetation Report in the project record.
33, Artley	" At page 11 you say you will violate your FP standards by creating an opening larger than 40 acres with no rationale."	We proposed "a minor variation from a Forest Plan guideline (i.e. clearcutting over 40 acres)" and not to "violate FP Standards". Standards are not the same thing as guidelines, the Forest Plan defines standards and guidelines on page 2-1: A Standard is defined as a course of action that must be followed, or a level of attainment that must be reached, to achieve forest goals. Adherence to Standards is mandatory. In general, they limit project-related activities, not compel, or require them. Deviations from

		Standards must be analyzed and documented in a forest plan amendment. Standards are developed when: A Guideline is also a course of action that must be followed. However, Guidelines relate to activities where site-specific factors may require some flexibility. Deviations from a Guideline must be analyzed and documented in a Project Level Environmental Assessment or Environmental Impact Statement. As directed in the paragraph above, our variation from the 40-acre guideline is analyzed and documented. The effects of this Forest Plan guideline deviation are described in the vegetation section, Section 3.4 of this EA, under the analysis of Alternative 2. Also, throughout Chapter 3 of the EA, effects to other resources like wildlife, soils, and recreation are outlined; more detail is contained in the resource reports in the project record.
33, Artley	"At page 12 you justify your clearcutting. You tell the public clearcutting will "promote healthy aspen stands and aid in moving the project area's age class distribution toward Forest Plan desired conditions." Who do you people think you are?...Not only do you propose to degrade the recreational opportunities with clearcuts you propose to violate the USFS maximum created opening direction with large clearcuts that exceed 40 acres because you claim "Deviating from the Forest Plan guidance of no clearcutting over 40 acres is being pursued to treat over mature aspen, increase forest health, and meet Forest Plan desired future conditions."	In the Fourmile proposed project area, being able to treat and move as many acres of aspen stands to Forest Plan desired conditions is connected to the purpose and need of the CNNF 2004 Land and Resource Management Plan ("Forest Plan"). In addition, promoting healthy and resilient forests which is tied to the rationale for exceeding 40 acres is connected to the project purpose and need (Forest Plan Goal 1.4). Alternative 2 includes a minor variation from a Forest Plan guideline (i.e. clearcutting over 40 acres). This variation would not require a Forest Plan amendment. A portion of the vegetation section of the EA discusses exceeding 40 acres and the no action alternative. Specifically, there are eight aspen or mixed aspen, paper birch, and balsam fir stands that would be combined to create harvest units greater than 40 acres in size. To ensure the Forest Service minimizes forest fragmentation (maintain forest connectivity) and still resolves the issue of forest resiliency in the Fourmile project area, it is necessary to avoid many smaller cuts and instead create temporary openings that exceed 40 acres in certain

		areas. If we do not clearcut we will lose many of our early successional species and the habitat they provide. Species such as Quaking Aspen, Big-tooth Aspen, Paper Birch, and Balsam Fir are fast growing, short lived species that inhabit sites after disturbances. Therefore, the optimum method for regenerating these species is short rotation clearcutting (Perala, 1990, p.561); please see page 14-15 of vegetation specialist report for further rationale. Not only are clearcuts beneficial to early successional tree species, they are also beneficial to certain wildlife species (please see Biological Evaluation report). If the Forest Service were not able to deviate from the 40-acre guideline, these large clearcuts would be sub-divided by approximately 10-acre leave areas or aspen shelterwoods (underplanting white pine for regeneration). This action would result in more acreage being impacted and would add up to approximately 60 acres.
33, Artley	"… You say large clearcuts over 40 acres are needed to "treat over mature aspen." A competent forest ecologist would say there is no such thing as an "over marure" tree [sic]. They would say its orders of magnitude more important to let the old trees die and fall to the ground to enrish [sic] the organics in the soil than it is to haul them to the mill to increase corporate ptofit [sic]. Obviously, the firest [sic] employees are clueless about the important role dead trees play in the forest. Allow me to educate you…".	Please see above response.
33, Artley	"…You say large clearcuts over 40 acres are needed to "meet Forest Plan desired future conditions." Your forest plan was obviously written by timber industry employees. It should have been revised long ago. Please hire a contractor to revise your forest plan based on best science. After reading the EA its clear	The Forest Plan states (p. 1-1): "Forest goals are broad statements describing conditions the forests will strive to achieve. They are not amenable to direct measurement and there are no specific time frames for achieving them. In other words, goals describe the ends to be achieved rather than the means to these ends."

	Chequamegon-Nicolet employees reject best science and could not do the job."	Forest plans are updated on a rotating basis between forests, as funds allow and needs rise up; most forest plans are updated every 15-25 years. The CNNF plan from 2004 is slated for an update within the next several years. Until the forest plan is updated, the CNNF is required to follow the most current plan available. All proposed actions match the needs of the 2004 Forest Plan the forest is required to follow.
33, Artley	"Why should I not believe the Chequamegon-Nicolet NF is populated by swarms of people who mindlessly seek to please their corporate masters at any cost?".	The CNNF employs professionals that must meet the U.S. Forest Service's and U.S. Government's highest standards of ethics and integrity when performing their jobs. All Fourmile proposed actions are backed by scientifically sound logic and mission needs.
33, Artley	Please put the American public ahead of what your silviculturist says is the "optimum" regeneration Rx.".	The silviculturist follows the 2004 forest plan in implementing the treatment types in proposed actions. The silviculturists follows the Forest Service's requirements, best available relevant science, and their professional knowledge in making sound decisions. Treatment types are intended for the best long-term health of the CNNF as according to the forest plan.
33, Artley	"… Ranger Kirschbaum, never again fancy yourself as someone who takes action on land owned by 324 million Americans that they need and want. These people are your supervisors, yet you choose to backhand them by using their tax money to take an action (clearcut) that over 90% of them have told you repeatedly they do not want. Of course you don't care what they want and don't want done to THEIR land do you. Why? You obviously feel the pesky public has no business interfering in USFS actions to create corporate profit opportunities."	The CNNF has performed scoping and public outreach to identify concerns and issues interested persons may have. Part of the NEPA process is intended to engage the public and other stakeholders so decisions may be made with the greatest understanding of the impacts of the proposed action. All comments received are reviewed and analyzed to best hear and understand the issues.
33, Artley	"… Mr. VanCleve and Ms. Theisen spent 4 years learning industrial forestry techniques intended to create corporate tree farm conditions. Not one acre of national forest land should be transformed by these people … even suitable land. There are a few IDT members who agree with what I am saying but they keep quiet and	All IDT members are highly qualified and well educated, including Mr. VanCleve and Ms. Theisen. All IDT member reports are reviewed and considered when making decisions, regardless of their results. The Environmental Assessment (EA) process is intended to discover all positive and negative outcomes of a proposed action as it is unknown if a significant impact will occur, if an IDT member finds a

	help you implement your appalling, calamitous clearcuts because they are afraid of you and they know if they don't perform as "team players" their promotion opportunities with an agency that has an overriding timber extraction agenda will be eliminated."	significant impact the EA process triggers the need for an Environmental Impact Statement (EIS). However, the difference between an EA and an EIS is not how rigorously the analyses are done, although EISs are often longer than EAs. The EA, a summary document, has much of the details contained in its appendices and in the project record. EISs usually include more of the detail in the EIS itself, as well as in appendices and in the project record.
33, Artley	"Before the USFS chooses to clearcut a portion of the forest, the NFMA requires the Forest Service to find that clearcutting is the "optimum method" for achieving the objectives and requirements of the LRMP. NFMA does not say the USFS must clearcut if it is the optimum method. If there are other silvicultural Rxs that achieve the objectives and requirements of the LRMP that are reasonable and appropriate but are not optimum they should be used because the public owners of the national forests do not want them clearcut. The wishes of the public should override all other goals… Once again, if there are other harvesting Rxs that achieve the objectives and requirements of the LRMP that the public describes as more pleasing "partial cuts" please use them in lieu of clearcutting. Don't allow your silviculturist to dictate your actions. Your job is to administer your forest the way the owners want. Clearcutting generates the maximum revenue from each acre logged. In the vast majority of cases $$$$$$$$ should not drive decisions on national forest land…When some LRMP goals are inconsistent with each other (i.e. achieving one goal makes it more difficult to achieve another) the goal that best serves the recreating public should prevail".	We considered various prescriptions for various stands. Recommended prescriptions in the Proposed Action were based on: the existing conditions; the desired future conditions from the Forest Plan, the best available scientific information, and many years of experience by experts working in similar conditions with similar proposed activities. Additionally, recreation is not the only purpose and need for this project. Recreation is not the only activity that does or should take place in this project area. The Forest Service has a multiple use mandate. Management requires balancing the needs for multiple uses and users.
33, Artley	"Unfortunately, when the USFS hires silviculturists their line-officer supervisors do not teach them that the goals of national forest land and private industrial tree	All USFS personnel, including silviculturists, must follow the forest plans of their forest for any proposed action. Forest plans are intended to ensure the long-term viability of their forest and not

	farms are not the same. Without this counseling, USFS silviculturists believe it's their job to maximize volume and profit from each national forest timber sale. They think the trees on "suitable" land must be treated like those that grow on tree farms … money on the stump that are all eventually hauled to the mill. They are practicing what they were trained to do…Since the agency has no formal training for entry-level silviculturists, their line-officers are expected to do it. Many USFS line-officers have more important things to do…Many USFS line-officers would never approve clearcuts even if clearcutting was the optimum regeneration method. They had the sense to compromise. They knew their job was not to grow large trees as quickly as possible, but to serve the public. They had the maturity to tell their silviculturists "NO." It didn't take long for the silviculturists to learn what their supervisor wanted. These silviculturists didn't dictate prescriptions. They proposed prescription options to the line-officer and explained the pros and cons for each…".	external interests. All actions are proposed, not dictated. Proposed actions go through the NEPA process before the Distract Ranger can make any decision.
33, Artley	"… Mr. VanCleve and Ms. Theisen, the American public does not want their national forests to resemble the photos at the following link. http://www.bing.com/images/search?q=clearcut+photos&qpvt=clearcut+photos&qpvt=clearcut+photos&FORM=IGRE After viewing each photo decide where you would pitch you tent and hike…".	Part of the Forest Service's mission is to produce wood for various uses. Trees are a renewable resource. It appears that most, if not all, of the photos were taken in the west, where ecosystems are vastly different than in the Fourmile project area.
33, Artley	"… Ranger Kirschbaum, will you and your IDT members who aren't foresters be proud to pockmark and disfigure the public's land with ugly visual scars? Does it make you feel powerful? How will you justify your actions when recreationists come to your office	The CNNF follows the 2004 Forest Plan Standards (Ch. 2 of the Forest Plan) and, whenever possible, the best management practices given by the Wisconsin Department of Natural Resources. Ch. 2 of the Forest Plan details the required standards to be followed and the recommended guidelines to consider when proposing an action to

	complaining about clearcuts? Do you really think they will buy the BS that they create a "healthy forest?".	protect and manage the management areas of the forest, including replanting/reforestation requirements after a project is completed.
33, Artley	"… Ranger Kirschbaum, you go the extra mile for your corporate masters don't you. You not only abuse the public land with clearcuts you rub it in our faces by creating openings greater than 40 acres that will take many decades to recover…You fail to provide the public with a believable reason why you must create a situation you know the public will not want. We provide the money for your salaries. We are your supervisors. Shouldn't you respect your supervisors' wishes?... Each IDT member should be ashamed. Do you really think the people who recreate on your forest approve of you spoiling the scenery to serve the resource extraction corporations?...You know the RF gives rubber-stamp approval for the creation of massive openings…You are indeed a USFS "team player" who puts the agency ahead of the public you claim to serve".	Justification for proposed actions can be found in the EA, further logic and explanations can be found in the appropriate specialist reports. Specialist reports can be found in the project record.
33, Artley	"Request for changes to be made to the final NEPA document: Eliminate ALL proposed clearcut units. Use a partial cut RX and consider restoring the area to what it was before it was logged by planting the same on-site species regardless of their lumber value…Failure to do this will violate 40 CFR 1500.2(e) and (f), NEPA Sec. 101(b)(2) and NEPA Sec. 101(c)".	Justification for proposed actions can be found in the EA, further logic and explanations can be found in vegetation report in the project record. The proposed alternative to eliminate all proposed clearcuts was considered but rejected as it
33, Artley	"The pre-decisional EA indicates there will be shelterwood prescriptions associated with the Proposed Action…You prescribe sheltewood [sic] as a way to regenerate these forested areas. You fail to include information required by NFMA…Request for changes to be made to the final NEPA document:… provide data and text demonstrating that soil, slope, or other watershed conditions will not be irreversibly damaged by sheltewood [sic] silvicultural prescriptions. 36 CFR	All applicable resources were analyzed by appropriate USFS professionals at the CNNF, including soil and aquatics. The specialist reports are summarized in chapter 3 of the EA. Full reports, including silviculture reasoning in the vegetation report and those of the other resources, can be found in the project record.

	219.11(a)(1)(iv)…provide data and text demonstrating that sheltewood [sic] silvicultural prescriptions are appropriate to meet the objectives and requirements of the relevant land management plan…Failure to do so will violate NFMA Section 6 (E)(i) and (iii) as well as NFMA Section 6 (F)(i)".	
33, Artley	'The pre-decisional EA does not discuss how the timber sale's logging and slash/RX burning activities will be mitigated to assure protected migratory bird species' individuals and their habitat are not harmed in any way".	Impacts to applicable RFSS and TES species, including some birds, can be found in the Biological Evaluation (BE) report. The BE is summarized in Ch. 3 of the EA, the full report can be found in the project record.
33, Artley	"… Ranger Kirschbaum, it is not only possible but highly likely that your logging and slash/RX burning will harm the habitat and/or kill individual birds. This is especially true of young birds that cannot flee the danger. The Treaty requires the NEPA document to include information showing why the following damage will not occur. The plaintiffs' attorney will expect the NEPA document to contain specific action that you will take to prevent:…"harm the birds with logging-related pollution"…"detrimentally alter the bird's habitat"…"environmentally degrade the area surrounding the bird's habitat", and…"kill bird chicks by destroying their nests or eggs"…The Fourmile draft EA doesn't come close to complying with the Act. It does not mention "migratory bird." I suggest before you form another IDT you consider adding a wildlife biologist".	Neotropical migratory birds are considered in the effects analyses of a Biological Evaluation (BE) only if they have status as a TES or RFSS. The forest plan was prepared with Neo-tropical Migrant bird species as a focus. The Desired Future Condition within the plan provides for habitat throughout implementation. Therefore, implementation of this project as it pertains to neo-tropical migrants is consistent with the Migratory Bird Treaty Act of 1918, Executive Order of 2001(Responsibilities of Federal Agencies to Protect Migratory Birds) and the 2008 MOU between the USFS-US Fish and Wildlife Service (USFWS) that promotes the conservation and control the take of migratory birds. This MOU has not yet been renewed by the USFWS and as a result the FS will follow the 2001 Executive Order as it pertains to species analyzed in this document, the Kirtland's warbler is the only federally listed Neotropical bird identified for analysis by the USFWS beyond the anticipated outcomes from implementation of the forest plan. The BE analysis conducted for this project by the District Wildlife Biologist considered the two alternatives proposed in the project EA. More than 90 RFSS, including species currently listed as "likely to occur" (LRFSS), and are known to occur in Region 9, but have not been documented in the Chequamegon-Nicolet National Forest (CNNF), were considered in this BE. Field surveys were conducted

		2017 and 2018 within the project area specifically for those species in which that habitat was deemed suitable and had potential effects. Of the species identified in Table 1 of the BE, 16 have been "confirmed" (6 animals and 10 plants) as occurring in habitat immediately within or adjacent (within 1-mile) to the project site. Those classified as "probable" have not been documented within the project area but could occur where habitat is suitable. Species necessary to consider, such as RFSS, LRFSS, and TES species are listed in chapter 2 of the Forest Plan. The results of this analysis are summarized in chapter 3 of the EA, the full report can be found in the project record. Appropriate language has already been included in the Biological Evaluation report and in the EA; the requested wording would be unnecessary or contradictory to the findings.
33, Artley	"As you can see at the link below, the Migratory Bird Treaty Act is a major issue with the Audubon Society. https://www.biologicaldiversity.org/news/press_releases/2018/migratory-birds-05-24-2018.php On May 24, 2018 the Audubon Society filed Audubon v. DOI. If your final NEPA document does not clearly comply with the requirements of the Act, this comment concerning the MBTA and instructions on how to access your final EA and draft decision will be sent to the Audubon Society in Washington DC. Ranger Kirschbaum you might become infamous. There's a good chance you will be responsible for Audubon v. USDA… [I] Request for changes to be made to the final NEPA document: Identify the birds that exist in and near the project area that are protected under the Migratory Bird Treaty Act and discuss how these birds will be protected during burning and timber harvest operations. The Act makes no allowance to consciously harm these birds for any reason… Failure to do so will violate the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) as	Neotropical migratory birds are considered in the effects analyses of a Biological Evaluation (BE) only if they have status as a TES or RFSS. The BE analysis conducted for this project considered the two alternatives described in the project EA. More than 90 RFSS, including species currently listed as "likely to occur" (LRFSS), and are known to occur in Region 9, but have not been documented in the Chequamegon-Nicolet National Forest (CNNF), were considered in this BE. Species necessary to consider, such as RFSS, LRFSS, and TES species are listed in chapter 2 of the Forest Plan. The results of this analysis are summarized in chapter 3 of the EA, the full report can be found in the project record. Therefore, implementation of this project as it pertains to neo-tropical migrants is consistent with the Migratory Bird Treaty Act of 1918, Executive Order of 2001(Responsibilities of Federal Agencies to Protect Migratory Birds) and the 2008 MOU between the USFS-US Fish and Wildlife Service (USFWS) that promotes the conservation and control the take of migratory birds. This MOU has not yet been renewed by the USFWS and as a result the FS will follow the 2001 Executive Order. As it pertains to species analyzed in this document, the Kirtland's warbler is the only federally listed Neotropical bird

	amended by: Chapter 634; June 20, 1936; 49 Stat. 1556; P.L. 86-732; September 8, 1960; 74 Stat. 866; P.L. 90-578; October 17, 1968; 82 Stat. 1118; P.L. 91-135; December 5, 1969; 83 Stat. 282; P.L. 93-300; June 1, 1974; 88 Stat. 190; P.L. 95-616; November 8, 1978; 92 Stat. 3111; P.L. 99-645; November 10, 1986; 100 Stat. 3590 and P.L. 105-312; October 30, 1998; 112 Stat. 2956)".	identified for analysis by the USFWS beyond the anticipated outcomes from implementation of the forest plan.
33, Artley	"… Ranger Kirschbaum, your References section does not contain the following important literature or comparable literature; therefore your migratory bird discussions are based on unsubstantiated speculation. The public expects more from a professional wildlife biologist…DeGraaf, R. M., Rappole, J. H. 1995. Neotropical migratory birds: natural history, distribution, and population change. Comstock Publishing Associates. Cornell University Press, Ithaca, New York… Migratory Bird Treaty Act. 1918. 16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended. NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer ...Memorandum of Understanding between the U.S. Department of Agriculture, Forest Service and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds. (December 08, 2008)".	The Forest Service has used the best available scientific information for analyses and determinations of prescriptions. Extensive research, literature reviews, and field work was performed to collect the most up-to-date information as species, to the best of our ability. Species evaluations and methodology can be found in the Fourmile Biological Evaluation (BE), found in the project record. The suggested reference (Degraaf and Rappole, 1995) pertains to neotropical migratory birds. An in-depth analysis of species, including Neotropical migratory birds, was conducted for the 2004 CNNF Forest Plan which the Fourmile project proposed actions support. Therefore, Neotropical migratory birds are considered as the Forest Plan was prepared with Neotropical Migrant bird species as one of the foci.
33, Artley	"It is not only possible but highly likely that that logging and slash/RX burning will harm the habitat and/or kill individual birds. This is especially true of young birds that cannot flee the danger: The Treaty requires the NEPA document to include information showing why the following damage will not occur. The plaintiffs' attorney will expect the NEPA document to contain	Please see previous response.

	specific action that will be taken to prevent:…"harm the birds with logging-related pollution"…"detrimentally alter the bird's habitat"…"environmentally degrade the area surrounding the bird's habitat", and…"kill bird chicks by destroying their nests or eggs"…The Fourmile draft EA doesn't come close to complying with the Act…	
33, Artley	Unless the final NEPA document clearly complies with mandate of the Act this comment concerning the MBTA and instructions on how to access your EA and draft decision will be sent to the Audubon Society in Washington DC'.	The Fourmile NEPA documents are available online for all interested persons and can be found at: https://www.fs.usda.gov/project/?project=51959
33, Artley	"Request for changes to be made to the final NEPA document: Identify the birds that exist in and near the project area that are protected under the Migratory Bird Treaty Act and discuss how these birds will be protected during burning and timber harvest operations. The Act makes no allowance to consciously harm these birds for any reason… Failure to do so will violate the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) as amended by: Chapter 634; June 20, 1936; 49 Stat. 1556; P.L. 86-732; September 8, 1960; 74 Stat. 866; P.L. 90-578; October 17, 1968; 82 Stat. 1118; P.L. 91-135; December 5, 1969; 83 Stat. 282; P.L. 93-300; June 1, 1974; 88 Stat. 190; P.L. 95-616; November 8, 1978; 92 Stat. 3111; P.L. 99-645; November 10, 1986; 100 Stat. 3590 and P.L. 105-312; October 30, 1998; 112 Stat. 2956)."	All RFSS, LRFSS, and TES species possibly impacted by the Fourmile proposed actions are listed and analyzed in the BE report, found in the project record. A summary of this report can be found in chapter 3 of the EA. Please see previous response specific to the Migratory Bird Treaty Act, thank you.
33, Artley	"Ranger Kirschbaum, please apply Dr. Jack Cohen's fine fuels removal methods to further reduce the risk to that people's homes will be destroyed and family members will be killed in the WUI areas that are at risk should a wildfire start nearby… The Fourmile timber sale pre-decisional EA tells the public at page 26 that	The CNNF does not have a proposed action that would remove or thin trees on private property and therefore impact the fine fuels found on private property/near homes. The District Ranger reviewed Cohen's research at your suggestion and found that the landscape-level proposed actions are not assessed by Cohen as the focus is on

	private property in the WUI near this sale is at risk of burning… [the CNNF ERFL district is] not proposing to apply the most effective fire damage risk reduction methods that exist developed by Dr. Jack Cohen (a USFS employee). His fine fuels removal methods are used worldwide. Because removing fine fuels does not produce volume you ignore his methods. A word search of your Fourmile EA reveals his name is not mentioned. This clearly indicates you care more about volume than you do human lives. Dr. Cohen's methods are described In Opposing Views Scientific Attachment #11. Please have the courage to read them".	fine fuels found around homes which Fourmile will not affect nor does the USFS have jurisdiction on private property.
33, Artley	" Intelligent, rational, caring land managers who really want to save people's lives and homes in the WUI would apply and depend on Dr. Cohen's fire damage risk reduction methods. There is no legitimate reason to reject Dr. Cohen's fine fuels removal methods. Here's what the USFS should do:…The USFS could hold workshops and distribute written information to WUI residents to explain Dr. Cohen's methods so they could apply them to their property…The USFS could offer to remove fine fuels near homes in the WUI owned by handicapped and/or elderly residents with written permission…distribute handouts to WUI residents describing Dr. Cohen's fine fuels removal methods (where and how)…contact the people living in the WUI and announce fine fuels removal workshops will be held to answer questions. These workshops will present Dr. Cohen's research conclusions that prove commercial hazardous fuels logging farther than 100 yards from the WUI is ineffective…Please do your job by including the… above as part of the Proposed Action".	The CNNF follows all Forest Service Handbook standards when designing and proposing actions, including fuel treatments. The CNNF only proposed actions on the public forest land and not on private lands where the CNNF has no jurisdiction; the research referenced (Cohen) is applicable to private lands and houses which the CNNF is not. The proposed action has analyzed impacts, including fuels, which can be found in the project record.
33, Artley	"These comments constitute your notification of the superiority of fine fuels removal to eliminate damage to	The CNNF follows all Forest Service Handbook standards when designing and proposing actions, including fuel treatments. The

	homes in the WUI. You will not be able to claim "I didn't know" in court when a landowner who was burned-out learns you chose to ignore this information. I have several aerial photos on file showing the damage after a fire swept through an urban area. One photo shows a house still standing among the others nearby that were reduced to ashes. The photo has a caption explaining the advantages of fine fuels removal. Remember, you will make these comments available for the public to read".	CNNF only proposed actions on the public forest land and not on private lands where the CNNF has no jurisdiction; the research referenced (Cohen) is applicable to private lands and houses which the CNNF is not. The proposed action has analyzed impacts, including fuels, which can be found in the project record.
33, Artley	"… One of your fellow USFS employees' research conclusions indicates fine fuels removal is far superior to commercial hazardous fuels logging farther away from the WUI than 100 yards, yet your draft EA doesn't mention Dr. Cohen's research conclusions. Dr. Cohen states several times in the many scientific papers he authored that commercial fuels removal farther than "100 to 200" feet from the WUI in ineffective. Why then do you propose widespread fuels logging? Of course I know the answer … you want the volume'.	The CNNF follows all Forest Service Handbook standards when designing and proposing actions, including fuel treatments. The CNNF only proposed actions on the public forest land and not on private lands where the CNNF has no jurisdiction; the research referenced (Cohen) is applicable to private lands and houses which the CNNF is not. The proposed action has analyzed impacts, including fuels, which can be found in the project record.
33, Artley	'If the final EA does not include a Dr. Cohen's fine fuels removal methods action alternative or include it in the current Proposed Action, it will be necessary to send hardcopies of this comment letter section and Opposing Views Science Attachment #11 to the Forest, Oneida, and Vilas County Commissioners who will also contact you. They will want to know why you refuse to protect the citizens living in their county from wildfire. Want to risk it?".	The CNNF follows all Forest Service Handbook standards when designing and proposing actions, including fuel treatments. The CNNF only proposed actions on the public forest land and not on private lands where the CNNF has no jurisdiction; the research referenced (Cohen) is applicable to private lands and houses which the CNNF is not. The proposed action has analyzed impacts, including fuels, which can be found in the project record.
33, Artley	"Request for changes to be made to the final NEPA document: Assure the Purpose & Need states this: "reduce the chance that homes will burn in the WUI should a wildfire start in the area" rather than reduce fuels. This new P&N would really serve the public and	The CNNF follows all Forest Service Handbook standards when designing and proposing actions, including fuel treatments. The CNNF only proposed actions on the public forest land and not on private lands where the CNNF has no jurisdiction. Utilizing controlled burns to reduce fuel levels in the CNNF contributed to an

	open the door to applying the Cohen fine fuels removal method…This issue is too serious to sweep under the rug. Federal Officials can be charged with reckless endangerment if they knowingly put the public at risk…Failure to provide maximum protection for those living in the WUI will violate 5 CFR 2635.101(b)(1). This law requires you to place "loyalty to the Constitution, the laws and ethical principles above private gain." …You will also violate… 40 CFR 1500.2(e) because your Proposed Action will not "avoid or minimize adverse effects of these actions upon the quality of the human environment."… 40 CFR 1500.2(f) because your Proposed Action will not "use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment"… NEPA Sec. 101(b)(2) because your Proposed Action will not "assure for all Americans safe, healthful, productive and esthetically and culturally pleasing. surroundings;"… NEPA Sec. 101(c) because your Proposed Action will not assure that "each person should enjoy a healthful environment."… Ex. Ord. No. 13045, Apr. 23, 1997 because your Proposed Action will not "Protection of Children from Environmental Health Risks and Safety Risks."… The FONSI will violate 40 CFR §1508.27(b)(2) because you didn't consider the "degree to which the Proposed Action affects public health or safety"…"	overall reduction in wildfire risks in the adjacent private properties. However, the USFS and CNNF do not have the jurisdiction to dictate actions of private landowners on private property and cannot therefore reduce the risk of fires on the private property themselves; the CNNF can only take actions to best reduce risk on its own lands by reducing the fuels available for wildfires. Therefore, the requested quote addition is not appropriate to be added to the EA nor other NEPA documents.
33, Artley	"… Ranger Kirschbaum, I suggest you allow the truth to guide your actions to really enhance the local community…Study: Recreation generates billions of dollars…Report focused on hunting, fishing and wildlife	Being consistent with the land management plan (Chequamegon-Nicolet National Forest Land and Resource Management Plan, or "Forest Plan" does not mean that every project has to have every goal in the Forest Plan as a Purpose or Need.

	viewing on land administered by BLM in the western states…Of course this also applies to national forest land. The forest service sells their timber sales claiming to help the local economy. This article shows the local economy is enhanced much more by people seeking recreation who spend $$$ on the local communities. The timber sale revenue that is generated helps millworkers and loggers. The recreation-generated $$$ is spread across many small businesses: motels, restaurants, gas stations, sporting goods stores, and grocery stores to name a few. The logging and roadbuilding associated with timber sales muddys-up [sic] the streams that harms fish habitat. The people who fish go elsewhere. In spite of the fact the USFS claims otherwise timber sales trash wildlife habitat which drives away those who enjoy viewing wildlife…USFS hydrologists, wildlife biologists and fisheries biologists know this but remain client [sic]. They know they must never say anything negative about commercial timber sales to maintain good standing in the USFS with a timber agenda".	No single project can "focus primarily" on all goals at the same time in the same area, including recreation. Likewise, no single project is likely to get us from "existing conditions" to "desired future conditions" for all habitat components. Reaching desired future conditions is often a long, time-consuming process, and may require multiple projects and entries over many years. Not everything that the Forest Plan directs can be a priority in the same project. In addition, impacts to the local economy can be found in the economic report in the project record. However, the commenter has provided no analysis of local and regional mills to determine their economic impact from the proposed action nor economic impacts to the biological resources and associated economies. This project, based on analysis done by CNNF resource specialists, has beneficial impacts for wildlife, plants, and their habitats. Some of the benefits come from managing the vegetation to provide a path or sequence of conditions that will lead towards the desired future conditions as described in the Forest Plan. Impacts to the recreation, biological, and aquatic resources can be found in that resource report in the project record.
33, Artley	"… Ranger Kirschbaum, please justify your actions…1) Tell the public which resource(s) in the sale area are unhealthy and (using independent science) explain how logging and road construction creates conditions where these same resources are functioning properly again after the area is "treated."… 2) Provide honest, believable, science based [sic] examples of how your timber sale "treatments" will deliver public "values and services like clean air and water, scenic beauty, habitat for wildlife, and opportunities for outdoor recreation" in and downstream from the sale area".	Reasoning for the proposed actions can be found in the EA, further explanations can be found in the resource reports in the project record.

33, Artley	"… Dr Power makes the following conclusions from his research findings: "Even within relatively isolated areas, such as the northeastern tier of counties, there was considerable economic vitality despite the declines in federal timber harvests."…"The relatively high unemployment rates in many of the eastern Washington counties adjacent to National Forests cannot be attributed to the decline in federal harvests. Those counties had even higher unemployment rates at the time of peak harvests in the late 1980s."…Please describe why Dr. Power's research does not apply to the Chequamegon-Nicolet National Forest". [Linking Federal Timber Harvests to the Local Economy: Why Has the Historical Link Been So Weak? by Thomas Michael Power, Ph.D., Professor of Economics, University of Montana, June 13, 2000. http://www.kettlerange.org/power/Ch3.htm]".	This research from 2000, focused on the forests found in the northwestern state of Washington, is not applicable to the midwestern state of Wisconsin. The CNNF is located in northern Wisconsin and the commenter fails to provide reasoning on how the research is applicable to the CNNF. Forest compositions and climates are very different between the two locations and research specific to one area may not be applicable to the other. As is the case here, the forest types and biome of eastern Washington are not the same as that of upper Wisconsin and the research completed is not appropriate to apply to the CNNF.
33, Artley	"… The US Department of Commerce has released a report showing the Outdoor recreation contribution to the GDP is larger than that of oil and gas extraction".	Economic analysis was completed for the proposed Fourmile project, the report can be found in the project record.
33, Artley	"… Why do you reject the findings and conclusions of Undersecretary of Agriculture Jim Lyons who states "recreation revenues from national forests significantly exceed timber revenues." Elsewhere in these comments are the results of public survey information indicating the public is less likely to recreate near areas that have been logged, thus logging diminishes recreation revenue. Since recreationists avoid areas that have been logged the many "ma and pa" businesses that depend on recreation & tourism dollars are harmed. How do you justify harming the revenues of motels, gas stations, restaurants etc. to increase the profits of a large corporations?... Please describe why Undersecretary	Economic and recreational analyses were completed for the proposed Fourmile project, a summary of their findings can be found in chapter 3 of the EA; full reports can be found in the project record. The proposed Fourmile project would produce approximately $3,904,000, with roughly $586,000 returning to State and local governments (Economic Report).

	Lyons' conclusions about community stability do not apply to the Chequamegon-Nicolet National Forest".	
33, Artley	"… You reject the research conclusions of 241 Ph.D. scientists quoted in Opposing Views Science Attachment #1 who demonstrate how logging-related harm (and in a few cases destruction) is inflicted on multiple natural resources in and near the sale area. Incredibly, you rely on the advice of 3 or 4 timber employees financially motivated to sell timber. You know the log for community stability P&N statement appears in at least 80% of all timber sale NEPA documents. This has become the commonly used excuse by USFS line-officers to sell unneeded timber sales and you use it here".	Mr. Lyons' comments are from 1996. You state in the last sentence in the paragraph above that we are using the "log for community stability P&N statement". Your statement is not correct; we do not say that we are logging for community stability. (make sure this is true in other docs in project record, specialist reports.) The references you provide describe commonly recognized impacts that can result from forest management activities. The Agency is aware of this information and recognizes that these impacts can occur. The Forest Service has recognized these potential impacts for decades and has developed a wide range of Best Management Practices, Timber Sale Contract requirements, and Forest Plan Standards and Guidelines all designed to reduce or eliminate the impacts during implementation of site-specific projects. These practices and requirements were developed at either a national, regional, or forest-wide level for use in the design and implementation of site-specific projects. These practices and requirements were developed with full consideration of the best available scientific literature and input from the scientific community and the general public. Other articles are site-specific articles on projects in western and other forests that are not applicable to this project, either because of different habitat types and/or different activities are proposed. The effects of timber harvest, road work, and prescribed fire on forest resources are disclosed in Chapter 3 of the EA.
33, Artley	"… If you were really concerned about local community stability and local job creation you would offer this sale as an SBA sale to prevent a large timber corporation from logging it using their own labor. This would prevent the logs from being hauled many miles to be	You request the following change be made to the final NEPA document: Offer the sale as an SBA sale and say so in the final NEPA document. However, you have done no analysis of local and regional mills to determine if they have a log supply problem.

	processed at a mill far removed from the small communities you claim need economic help. Of course your motivation to sell this timber sale has nothing to do with community stability. We both know "local community stability" and "local job creation" is part of the USFS dishonest script to trick the public into accepting tragic timber sales".	Currently, mills do not depend solely on the FS land, product is received from state, county, and private sources.
33, Artley	"… Ranger Kirschbaum, I have presented you with verified information showing outdoor recreation generates 790 billion dollars and 65 million jobs annually. Most of this [sic] benefits local economies. The fact is, the Fourmile timber sale will harm the economy of the communities near it. People seek out areas that have not been logged for their recreation. I hope you get the chance to tell the judge this isn't true… [I] Request for changes to be made to the final NEPA document: Offer the sale as an SBA sale and say so in the final NEPA document…Failure to do so will violate 40 CFR 1500.1(b) because "environmental information is not available to public officials and citizens before decisions are made." You also violate 40 CFR 1502.13 because producing logs from this sale cannot possibly maintain the stability of local and regional economies as I have shown above. You all know this is a P&N that is in NEPA documents for 98 % of proposed timber sales in America. You have done no analysis of local and regional mills to determine if they have a log supply problem".	You request the following change be made to the final NEPA document: Offer the sale as an SBA sale and say so in the final NEPA document. However, you have done no analysis of local and regional mills to determine if they have a log supply problem. Currently, mills do not depend solely on the FS land, product is received from state, county, and private sources.
33, Artley	"The range of alternatives in the pre-decisional EA is inadequate. Of course there are "reasonable" alternatives to the Proposed Action that you conveniently overlook. Analyzing a single action alternative as has been done here is clearly intended to	There is no requirement to analyze multiple action alternatives in detail. Two options in the draft EA were presented, a "no action" and one action alternative. The final EA has at least one additional action discussed in response to a comment.

	hardwire the selection of the Proposed Action for implementation in violation of the NEPA".	
33, Artley	"… Pretending to pass a project through the NEPA process with only 1 action alternative (the Proposed Action) makes a mockery of the National Environmental Policy Act. A "do it" or "don't do it" NEPA analysis is not a NEPA analysis but a justification of the Proposed Action. There are alternatives ways to accomplish any goal… [I] request to develop a "no new roads" action alternative in detail. You know there is more than 1 way to satisfy your P&N, therefore it's not unreasonable to develop a 2nd or 3rd action alternative".	An alternative is not selected for implementation until the Decision document is signed; a Decision Notice (DN) is signed for EAs. As you know, developing a Proposed Action is a step in the NEPA process that comes before the scoping period so the public has something to comment on that includes site-specific and activity-specific information. The Proposed Action sent out for the 30-day notice and comment period was similar to, but not the same as the Proposed Action sent out for the scoping period. Changes were made to the Proposed Action in response to both public and internal comments. See Chapter 2 of the EA for documentation of alternatives and changes considered.
33, Artley	"Summarize, as relevant, information from scoping (Step 4 above). In this summary, highlight decisions your team made regarding possible alternatives and potential mitigations that link to different alternatives. This information should further prove that your team was open to different alternatives, especially any that the public suggested."	Comments from scoping and responses are summarized in Appendix C of the draft EA and will be in the same appendices for the EA published for the objection period. Appendices A and B give details about which specific design features and mitigation measures would be applied to each unit.
33, Artley	"… Larry Freeman, the Senior Consultant for the Shipley Group that the USFS contracts to teach the NEPA process states: "A single action alternative is a risky agency choice, especially if you determine that your EA or EIS is likely to be a high-risk and controversial document." Link to Mr. Freeman's comment: http://www.shipleygroup.com/news/articles/0911.pdf... 36 CFR 220.7(b)(2)(i) states: "When there are no unresolved conflicts concerning alternative uses of available resources (NEPA, section 102(2)(E)), the EA need only analyze the proposed action and proceed without consideration of additional alternatives." NEPA Section 102(2)(E) states "study, develop, and describe	There are no unresolved scientific conflicts concerning alternative uses of available resources. This is not a high-risk project. The types of activities proposed in the Fourmile EA are commonly implemented projects, planned for similar ecosystems. We are not ignoring the recommendations the Shipley Group puts out in their training sessions. But not every suggestion applies to every project put out by every agency.

	appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." …The vast majority of the scoping comments submitted by the public are critical of the project and suggest changes in the Proposed Action. Therefore to comply with NEPA you must analyze another action alternative that is more ecosystem friendly and has much less adverse natural resource impact than the Proposed Action".	
33, Artley	"… Please don't ignore the Shipley Group NEPA recommendations as you prepare your final EA. The USFS spends millions of dollars to hire this company to teach agency employees how to apply the NEPA process correctly? Ranger Kirschbaum, are your qualifications comparable to Dr. Freeman who works for the Shipley Group? They must be for you to ignore Dr. Freeman's advice that "A single action alternative is a risky agency choice, especially if you determine that your EA or EIS is likely to be a high-risk and controversial document." Link to Mr. Freeman's comment: http://www.shipleygroup.com/news/articles/0911.pdf... The scoping comments are highly critical of this timber sale".	The CNNF follows the Forest Plan which the proposed Fourmile project follows. The Forest Plan was prepared in accordance with the Forest and Rangeland Renewable Resources Planning Act of 1974 as amended by the 1976 National Forest Management Act (NFMA), the 1969 National Environmental Policy Act (NEPA), and other laws and associated regulations. In addition, the CNNF follows the NEPA requirements listed in the Forest Service Handbook, Center for Environmental Quality (CEQ), and the Forest Service Manual.
33, Artley	"Request for changes to be made to the final NEPA document: Analyze at least 1 additional action alternative in detail … preferably an alternative suggested by the public as part of their scoping comments. Also expand the Purpose & Need to allow non-harvest alternatives. Based on reading the scoping comments and your responses to these scoping comments there are clearly "unresolved conflicts" with this proposed timber sale…Failure to analyze a 2nd	There is no requirement to analyze multiple action alternatives in detail. One alternative suggested by the public put a 1 mile no-harvest buffer around the Hidden Lake Trail. This was analyzed, but the Responsible Official determined this issue did not warrant further analysis because this alternative would not fully meet the purpose and need, would negatively impact the trail system in the long-term, and visual resources would already be mitigated with Forest Plan guidelines and project mitigations. See additional information on this alternative in the EA. Another alternative suggested was to drop

	action alternative in detail violates…40 CFR 1501.2(e) because you do not "identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment."… 40 CFR §1506.1 (a)(2) because you took action to "Limit the choice of reasonable alternatives." …36 CFR 220.7(b)(2), because you did not "briefly describe the proposed action and alternative(s) that meet the need for action."…NEPA Section 102(E), because you did not "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal in any proposal which involves unresolved conflicts concerning alternative."	herbicide treatments in the proposed action that had been included for research purposes. In response to IDT discussions from that comment, herbicide was dropped from the Fourmile proposal.
33, Artley	"Descriptions of how logging this sale (emphasis added) will affect climate change do not exist in the pre-decisional EA".	We do not agree that the Forest Service is required to address the effects of individual projects on climate change, such as a logging sale. As the August 2016 CEQ memo titled "Final Guidance for Federal Departments and Agencies on Consideration of [GHG] Emissions and the Effects of Climate Change in [NEPA] Reviews." was rescinded April 2017 when Executive Order 13783 "Promoting Energy Independence and Economic Growth" was issued in March 2017, the CNNF therefore utilized the previous February 2010 memo from the Council on Environmental Quality (CEQ) which specifically excluded land management agencies because "land management techniques, including changes in land use or management strategies, lack any established Federal protocol for assessing their effect on atmospheric carbon release and sequestration at a landscape scale". Furthermore, Forest Service analysis of this issue (Climate Change Considerations in Project-level Analyses, 2009) concludes that, "It is not currently feasible to quantify the indirect effects of individual or multiple projects on global climate change and therefore determining the significant effects of those projects or project alternatives cannot be made at any scale". Additionally, findings of the

		Intergovernmental Panel on Climate Change (IPCC) in its Fourth Assessment Report concluded that " In the long-term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fiber or energy from the forest, will generate the largest sustained mitigation benefit" (IPCC 2007a, p. 543). However, the CNNF has demonstrated a commitment to better understanding the carbon balance of the Forest by working in close partnership with the scientific community on this topic. The Forest Service works closely with not only internal researcher but also in partnerships with universities, federal and state agencies, non-governmental organizations and the forest industry here and abroad to develop understanding in the processes and extent of global climate change and their probable/possible effects on forest ecosystems. For example, the CNNF is located in the Northern Region of the FS Research and Development Program. The Northern Research Station (NRS) is involved in programs such as the Northern Institute of Applied Carbon Science (NIACS), which is a collaborative effort of the Forest Service, universities, and forest industry to provide ecological, economic, and social information that can be used to manage forests for the sequestration of atmospheric carbon. In addition, as part of the cooperative Chequamegon Ecosystem Atmosphere Study (ChEAS), NRS scientists have been studying the energy, water vapor and CO2 exchange between forest ecosystems and the atmosphere to understand the dynamics of forest productivity. From these and other efforts, the CNNF is very fortunate to have a good understanding of the Forest's biological and industrial carbon budget based on recent and locally based research (Fassnacht and Gower 1997, Cook et al. 2004, Desai et al. 2005, Noormets et al. 2007). Perhaps the most relevant research regarding the effects of forest management on greenhouse gas emissions on the

		Chequamegon-Nicolet is the carbon life-cycle analysis research conducted by Dr. Tom Gower and his associates at UW-Madison. Gower and Ahl (2006) calculated the industrial carbon cycle, including all the emissions associated with timber harvest, transportation, and processing. They concluded that even with current harvest levels, the CNNF is acting as an overall carbon sink. This means that the more carbon (or carbon dioxide) is stored than is emitted on the CNNF. As mentioned above, many studies show a net reduction in greenhouse gas emissions results from substituting timber products for other materials (for example, cement, steel, and heating fuel that consume more fossil fuels to produce than wood substitutes). When substitution effects are anticipated, the proposed actions could actually result in a small offset of other global carbon emissions. In short, the proposed vegetation management actions are not expected to result in an overall net increase in greenhouse gas emissions and the CNNF will continue to act as an overall carbon sink.
33, Artley	"… Ranger Kirschbaum, the USFS expects you to lie to the public about the reasons climate change conditions have passed the point of no return. You know if you don't lie you can forget future promotions. Read this: … "There's 400 gigatons [of carbon] now, in the 3 trillion trees, and if you were to scale that up by another trillion trees that's in the order of hundreds of gigatons captured from the atmosphere – at least 10 years of anthropogenic emissions completely wiped out," he said…Planting trees is great, but I can't help thinking we also need to stop chopping down forests in the first place. When you chop down a tree, you destroy the entire ecosystem that depended on it. Planting a new tree doesn't bring that back." … https://www.treehugger.com/climate-change/heres-how-many-trees-it-would-take-cancel-out-climate-	Please see above response.

	change.html?utm_source=TreeHugger+Newsletters&utm_campaign=2f7b7440f5-EMAIL_CAMPAIGN_11_16_2018_COPY_01&utm_medium=email&utm_term=0_32de41485d-2f7b7440f5-243777253" .	
33, Artley	"… Ranger Kirschbaum, you conveniently omit research that finds logging emits more CO2 than wildfire. Here's an excerpt from Oregon State University researcher Beverly Law and her colleagues' research conclusions… "The wood products sector generated about one and a half times more emissions than the transportation or energy sector emissions reported by the Oregon Global Warming Commission. Wood product emissions are the result of fuel burned by logging equipment, the hauling of timber, milling, wood burned during forestry activities, and the ongoing decomposition of trees after they are cut. Forest fire emissions were less than a quarter of all forest sector emissions in each of the five-year increments studied between 2001 and 2015." …Climate change is a major issue world-wide. So what do you propose to do? Make it worse by logging 18.9 square miles… https://mountainwestnews.org/harvesting-co2-2d88711b644d ".	Please see above response. The commenter also fails to provide the links or documentation to the specific research referenced.
33, Artley	"… National Geographic magazine features logging's effect in climate change. Here are excerpts from the article at the link below… "Modern-Day Plague…Deforestation is clearing Earth's forests on a massive scale, often resulting in damage to the quality of the land. Forests still cover about 30 percent of the world's land area, but swaths half the size of England are lost each year." … "Deforestation can have a negative impact on the environment. The most dramatic impact is a loss of habitat for millions of species. Eighty	The CNNF follow the standards of the 2004 Forest Plan. Replanting and reseeding are some of the tools used to facilitate growth in the harvested areas. In the few instances of clearcuts, Aspen regeneration is the intended goal. Aspen is an early successional disturbance species and is projected to dominate the cleared areas within 5 years. If we do not clearcut we will lose many of our early successional species, including Aspen, and the habitat they provide. Species such as Quaking Aspen, Big-tooth Aspen, Paper Birch, and Balsam Fir are fast growing, short lived species that inhabit sites after disturbances. Therefore, the optimum method for regenerating these species is

	percent of Earth's land animals and plants live in forests, and many cannot survive the deforestation that destroys their homes…Deforestation also drives climate change. Forest soils are moist, but without protection from sun-blocking tree cover, they quickly dry out. Trees also help perpetuate the water cycle by returning water vapor to the atmosphere. Without trees to fill these roles, many former forest lands can quickly become barren deserts." … http://www.nationalgeographic.com/environment/global-warming/deforestation/?utm_source=NatGeocom&utm_medium=Email&utm_content=video_20170811&utm_campaign=WatchThis_PM&utm_rd=917302404 ".	short rotation clearcutting (Perala, 1990, p.561); please see page 14-15 of the Vegetation Specialist Report for further rationale. Not only are clearcuts beneficial to early successional tree species, they are also beneficial to certain wildlife species (please see Biological Evaluation report). Please see previous responses for climate related answers.
33, Artley	"… Forests are natural carbon sinks. Carbon sinks absorb carbon dioxide. Un-manipulated (unlogged) Forests reduce the concentration of greenhouse gases into the atmosphere and delay the sordid effects of climate change. Trees store carbon dioxide. When the trees are removed (logged or burned) the stored carbon dioxide is released into the atmosphere…Here is science authored by independent scientists who unlike you, have no interest in volume… [1] Link: https://medium.com/@dannadogwood/the-us-must-cut-emissions-not-forests-801d8c4c5a47 ... [2] Link: https://truthout.org/articles/logging-is-the-leading-driver-of-carbon-emissions-from-us-forests/ … [3] Link: https://www.hcn.org/articles/climate-change-timber-is-oregons-biggest-carbon-polluter?utm_source=wcn1&utm_medium=email … [4] Link: http://www.truth-out.org/news/item/40775-to-curb-climate-change-we-need-to-protect-and-expand-us-forests ... [5] Link: http://a123.g.akamai.net/7/123/11558/abc123/forestservi	Links 1-6 & 8 are opinion-based articles from non-peer reviewed sources and do not provide new or scientific information/data. Link 7 pertains to the impacts of fire management in three pacific northwest ecosystems, the commenter does not provide reasoning for how this information is relevant to the CNNF which is located in the upper section of the midwestern state of Wisconsin.

	c.download.akamai.com/11558/www/nepa/95412_FSPLT3_2571365.pdf ...[6] Link: http://www.greenpeace.org.uk/forests/climate-change ... Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest ecosystems… Published by Ecological Applications. 19(3), 2009, pp. 643–[sic]… Mitchell, Stephen Ph.D., Harmon, Mark Ph.D. and O'Connell, Kari Ph.D. [7] Link: http://onlinelibrary.wiley.com/doi/10.1890/08-0501.1/abstract ... [8] Link: http://www.huffingtonpost.com/ellen-moyer-phd/trees-are-our-climate-logging_b_4775894.html ...".	
33, Artley	"… Dr. Moyer's article stressing the fact that live trees capture the greenhouse gas carbon published in the Huffington Post in 2014 states… "Trees are our climate saviors, and it takes decades or centuries — time we don't have — to recover from the mistake of cutting them down." … "Photosynthesis is one of only two significant mechanisms for removing carbon dioxide from the atmosphere."…"Uncut forests store more carbon than do forests that are logged, and the loss of carbon is proportional to the extent of harvesting. Over two-thirds of the total carbon in forest ecosystems is stored in forest soil, and significant release of soil carbon occurs from logging."… Link: http://www.huffingtonpost.com/ellen-moyer-phd/trees-are-our-climate-logging_b_4775894.html ... Ranger Kirschbaum, you clearly believe the trees in the Chequamegon-Nicolet National Forest don't Photosynthesize or Dr. Moyer doesn't know what she's talking about. Which is it?".	This link is of an opinion-based article from a non-peer reviewed journal and does not provide new or scientific information/data for analysis. The commenter fails to provide relevant peer-reviewed scientific data for review. Summary of analysis on impacts to resources, including trees, can be found in chapter 3 of the EA; full reports of each resource can be found in the project record.
33, Artley	"Request for changes to be made to the final NEPA document: Include an accurate, truthful discussion of the direct and indirect effects of how logging this sale will	Please see above responses in regards to your climate change impacts request. The Forest Service is not required to include analysis for project level climate change. Forest Service analysis of this issue

	affect greenhouse gases and climate change... Also include the best science documents shown above in your Reference section and cite them in the text… 1) Climate Change Considerations in Project Level NEPA Analysis (Washington Office Memo January 13, 2009) …2) Executive Order 13514 of October 5, 2009;…3) The National Environmental Policy Act. NEPA states that all Federal agencies "to the fullest extent possible" must provide a detailed environmental impact statement (EIS) (42 U.S.C. 4332). Neither Congress nor the courts have indicated precisely how much detail an EIS must contain. However, courts consistently have held that, at a minimum, NEPA imposes a duty on Federal agencies to take a "hard look at environmental consequences" (Natural Resources Defense Council v. Morton, 458 F.2d 827, 838 (D.C. Cir., 1972)".	(Climate Change Considerations in Project-level Analyses, 2009) concludes that, "It is not currently feasible to quantify the indirect effects of individual or multiple projects on global climate change and therefore determining the significant effects of those projects or project alternatives cannot be made at any scale". Additionally, findings of the Intergovernmental Panel on Climate Change (IPCC) in its Fourth Assessment Report concluded that " In the long-term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fiber or energy from the forest, will generate the largest sustained mitigation benefit" (IPCC 2007a, p. 543). Requirements for an EIS are not the same for an EA, however a "hard look" was taken at possible environmental impacts. Environmental impacts of the proposed project can be found in Chapter 3 of the EA or in the resource reports in the project record.
33, Artley	"If you care about maintaining aquatic species' health you will indicate in the final EA that all newly constructed temporary roads will be obliterated or decommissioned according to law (see below) after use…"	The EA states that temporary roads will be decommissioned after use. It is a Forest Plan standard (p. 2-36) that all temporary roads be decommissioned upon completion of authorized use. Forest Plan standards are not usually repeated in an EA or other NEPA document because it is a given that we will follow them. The Forest Plan lists guidelines for various methods of decommissioning on pages 2-36 to 2-37. It is not a requirement that we "… completely eliminate the roadbed by restoring natural contours and slopes, …." The rest of the sentence that you partially quote is "… or other methods designed to meet the specific conditions associated with the unneeded road." Obliteration is but one of many methods and outcomes of decommissioning roads. Further information on impacts related to roads can be found in the Travel Analysis Report in the project record. Additionally, possible impacts to aquatic resources was analyzed and can be found in the Aquatics Report of the project record.

33, Artley	"… You indicate you will construct 0.2 miles of temporary road…You say you will decommission temporary roads after use. I expect your decommissioning to be consistent with 36 CFR 212.5(b)(2). Pay special attention to the requirement that you "completely eliminate the roadbed by restoring natural contours and slopes." Your proposed temporary road treatments after use are unacceptable… Here's the rext [sic] of 36 CFR 212.5(b)(2) … (2)Identification of unneeded roads. Responsible officials must review the road system on each National Forest and Grassland and identify the roads on lands under Forest Service jurisdiction that are no longer needed to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails. Decommissioning roads involves restoring roads to a more natural state. Activities used to decommission a road include, but are not limited to, the following: reestablishing former drainage patterns, stabilizing slopes, restoring vegetation, blocking the entrance to the road, installing water bars, removing culverts, reestablishing drainage-ways, removing unstable fills, pulling back road shoulders, scattering slash on the roadbed, completely eliminating the roadbed by restoring natural contours and slopes, or other methods designed to meet the specific conditions associated with the unneeded road. Forest officials should give priority to decommissioning those unneeded roads that pose the greatest risk to public safety or to environmental degradation".	Decommissioning takes a number of different forms, information on CNNF road closure procedures can be found in the Forest Plan (2-36). Road closure strategies vary depending on the terrain and vegetation. Gates, large rocks, and earthen berms are three methods of road closures or decommissioning. All reasonable and fiscally responsible efforts are done to ensure the closure of slated roads. Site-specific decommissioning plans will be made prior to implementation. Further information can be found in the Travel Analysis Report in the project record.
33, Artley	"… We have all walked short sections of "temporary" roads that were constructed and located by employees working for the purchaser. Their goal was to minimize cost … not reduce aquatic damage by eliminating the	The Forest Plan lists guidelines for various methods of decommissioning on pages 2-36 to 2-37. It is not a requirement that obliteration be used but is one of many methods and outcomes of decommissioning roads. Road closure strategies vary depending on

	possibility that sediment might enter streams. Your IDT hydrologist and fisheries biologist should know temporary roads are outsloped, thus they are linear sediment generators each time it rains and when the snow melts in the spring…Whatever they call it (obliterate or decommission) professional, knowledgeable USFS line-officers, hydrologists and fisheries biologists always propose to completely eliminate the roadbed by restoring natural contours and slopes…Here is some obliteration information that you and your IDT members should already know…Obliteration can be the most effective treatment for both aquatic and terrestrial species. In full obliteration, culverts are removed, road surfaces are ripped and slopes are recontoured (see below for explanations of these treatments). In simple decommissioning, sites (such as stream crossings) are treated, but the segments (such as the roadbed between two stream crossings, or between water bars) are left intact. In obliteration, all sites and segments are treated. Subsurface water flow is no longer interrupted, allowing water to flow normally throughout the system and therefore aiding with vegetative recovery and reconnecting fragmented habitat. Recovering the original topsoil may also aid in revegetative success and limit the spread of non-native species on the site. Road obliteration, therefore, addresses both the aquatic/hydrologic and terrestrial problems caused by roads."	the terrain and vegetation. Gates, large rocks, and earthen berms are three methods of road closures or decommissioning. All reasonable and fiscally responsible efforts are done to ensure the closure of slated roads. Site-specific decommissioning plans will be made prior to implementation. Further information can be found in the Travel Analysis Report in the project record.
33, Artley	"Request for changes to be made to the final NEPA document: Obliterate (or decommission according to law) all temporary roads after use…Failure to do so will violate…40 CFR 1500.1(c) because your lack of action will not "protect, restore, and enhance" the aquatic	The Forest Plan lists guidelines for various methods of decommissioning on pages 2-36 to 2-37. It is not a requirement that we "… completely eliminate the roadbed by restoring natural contours and slopes, …." The rest of the sentence that you partially quote is "… or other methods designed to meet the specific

	environment…40 CFR 1500.2(e) and (f) because the Proposed Action will not "avoid or minimize adverse effects of these actions upon the quality of the human environment" and will not "restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment."… 36 CFR 212.5(b)(2) because you did not completely eliminate the roadbed by restoring natural contours and slopes after the road is no longer needed… The Proposed Action will clearly cause the resource degradation and destruction described in the OPPOSING VIEWS SCIENCE ATTACHMENTS to these comments…The vast majority of scientific logging-related effects literature is authored by independent scientists not affiliated with the USDA. These independent scientists describe how logging activities will damage, impair and sometimes destroy the proper functioning of numerous natural resources…You can learn about the logging-related resource damage in Opposing Views Attachment #1.	conditions associated with the unneeded road." Obliteration is but one of many methods and outcomes of decommissioning roads. Appendix E for Fourmile states "Decommissioning efforts may include reestablishing drainage patterns, scarifying roadbeds, planting native vegetation, re-contouring the road bed back to pre-road conditions, or this action may include placing an earthen berm and allowed to revegetate naturally." The referenced opposing views attachment has been addressed in other comments. Please see those for a specific response.
33, Artley	"… The public does not want natural resources in their public land that will be inherited by future generations to be destroyed in order to provide corporate profit opportunities. Opposing Views Science Attachment #10 gives you the results of 16 statistically significant nationwide polls revealing the public's feelings about national forest logging. Depending on the poll between 63% and 81% didn't want logging. You propose to log 18 square miles. How can you justify calling yourself a public servant? In reality you are serving your corporate masters".	All actions proposed in the Fourmile project follow the 2004 Forest Plan which intends to complete the 2000 USDA agency mission "… to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations." All actions taken by the CNNF are to protect or manage forest resources to ensure the long-term viability of the forest. The referenced "opposing views" attachment was reviewed and addressed and can be found later in appendix C.
33, Artley	"Request for changes to be made to the final NEPA document: Include some source documents from the	There is no requirement to respond to nor cite opposing views; the 40 CFR 1500.1(b) and (c) and 40 CFR 1500.2(e) and (f) cover

	Opposing Views Science Attachments in the References/Literature Cited section, and also, cite the applicable specific quotes presented in the Opposing Views Science Attachments…Failure to do so will violate 40 CFR 1500.1(b) and (c) and 40 CFR 1500.2(e) and (f)".,	availability of documents or specifics of alternative identifications and are not a requirement to "cite" a comment's content. However, while not cited, the referenced attachments provided by the commenter of the "opposing views" were reviewed and addressed and can be found elsewhere in appendix C.
33, Artley	"Professional USFS line-officers would never hide important project-related information from the public…You used public tax dollars to create the public information you conceal as hardcopies at the District. You should be ashamed. If the information you have hidden away were professionally done you would be glad to share it with the public who owns it. Your behavior borders on being criminal… 40 CFR 1502.21 allows you to incorporate material by reference. It also says… "No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment."…You tell the public they must drive or fly to Eagle River to inspect the hardcopy material in the project record. This is not "reasonably available for inspection by potentially interested persons…".	The USFS does not require in-person viewing of project records. All records are available electronically or can be sent upon request.
33, Artley	"… You hide important documents related to this project as hardcopies in the project record located in Eagle River. Most of these documents were created on your computer. Even a child has the computer skills to post electronic documents online. If the document was not created on the computer these children would know how to scan them and create a PDF file that could be posted online. Obviously, you do not want the public to read these documents. Why? Either they don't exist or they aren't truthful and don't support this project…You and your IDT members will do anything to prevent the public from submitting critical comments as you have	The USFS does not require in-person viewing of project records. All records are available electronically or can be sent upon request.

	your way with the Chequamegon-Nicolet National Forest owned by 323 million Americans. These Americans want to provide you with informed, meaningful comments based on all the information available about the proposed project … which you go out of your way to keep them from reading".	
33, Artley	"… Important information that would help the public understand the proposed project analysis disclosed in your draft EA is hidden away in the project record. It's sad you use this illegal and unethical scheme to hide information from the public you claim to serve…There should be no hardcopy documents related to this sale located in the project record on the district. You know they can be easily posted online. Do you really expect a member of the public to drive (or fly) thousands of miles to view this public information? The information belongs to the public. Will you pay for the trip? Will you accept the liability if someone has an accident? Who are you?".	The USFS does not require in-person viewing of project records. All records are available electronically or can be sent upon request.
33, Artley	"… There is absolutely (emphasis added) no reason to keep information from the public by hiding important documents in the project record. You could scan information and post the PDF files online. All information on file can be made available to the public as attachments. Especially relevant documents should be included in their [sic] entirely in an Appendix. Clearly, you do not want the public to see the information in the Project Record. What are you trying to hide from the public?".	The USFS does not require in-person viewing of project records. All records are available electronically or can be sent upon request.
33, Artley	: "Request for changes to be made to the final NEPA document: Make ALL the documents that currently reside in the Project Record available as 1) online Appendices to the NEPA document, or 2) attach them to the EA…This legal violation is not trivial. Don't	The USFS does not require in-person viewing of project records. All records are available electronically or can be sent upon request.

	respond to this issue by telling me its not required that you display all project-related information online. If you do it clearly means you don't understand the basics of NEPA … public disclosure…Failure to do so will violate 40 CFR 1502.21, 40 CFR 1500.2(b), 40 CFR 1501.2(a) and (b), 40 CFR 1500.2 (d), and 40 CFR 1506.6 (a) and (b)".	
33, Artley	"Request for changes to be made to the final NEPA document: Respond to each responsible opposing view quote contained in the Opposing Views Attachments…Failure to do so will violate 40 CFR 1502.9(b)".	There is no requirement to respond to opposing views. The regulation applicable to this project is 36 CFR 218.25 (b) (1): "The responsible official shall consider all written comments submitted in compliance with paragraph (a) of this section." The responsible official considered opposing views as part of these written comments. However, analysis of the attachments provided by the commenter were reviewed and addressed elsewhere in appendix C.
33, Artley	"… As you can see above, 40 CFR 1502.9(b) requires meaningful responses to all "responsible" opposing views. If the Responsible Official feels the opposing view is irresponsible then please describe why. The law does not exclude opposing views because of the source. Opposing views contained in newspapers, magazines, and other sources are still opposing views and require a response. Please do not conclude an opposing view is not responsible because they are opinions. "Viewpoint" and "opinion" are synonyms… Remember, Responsible Officials have the option of not responding to an Opposing View only if the viewpoint is irresponsible and you describe why it's irresponsible. The law does not exempt responsible opposing views that are "opinion pieces." Indeed, "viewpoint" and "opinion" are synonyms. You must reply to all viewpoints that are not irresponsible. Once again, how would a judge interpret the law?"	40 CFR 1502.9(b) states "Final environmental impact statements shall respond to comments as required in part 1503 of this chapter. The agency shall discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised…" The Fourmile project EA is not an environmental impact statement (EIS) and has no requirement to respond to comments. However, the responsible officials and IDT reviewed each of the submitted opposing views documents and considered them as potentially useful information to guide the analysis and the decision. Only some of the documents were peer-reviewed scientific literature; others were opinion documents or websites not associated with scientific research or organizations. Additionally, many of the submitted or referenced documents describe commonly recognized impacts that can result from forest management activities, and where the impacts could occur as a result of the project, they were disclosed in the effects analysis in the environmental assessment or specialist reports.

33, Artley	"… Alternatives to the Proposed Action were staring you in the face. Your constituents asked you to analyze the following alternatives in detail in their scoping comments. Their requests were forthright and sincere. They knew you are required to analyze all "reasonable" alternatives in detail. They knew their request for a detailed analysis of their alternative might change outputs, but they knew that didn't make their alternative "unreasonable" as used in 40 CFR §1506.2 (e). The public knew their alternative suggestion met the Purpose & Need in spite of the fact the timber outputs were different than the Proposed Action. Your IDT members knew you wanted all citizen generated alternatives (regardless of their merit) to be placed in the "alternatives were considered but eliminated from detailed study" section…".	NEPA does not require that a responsible official analyze all suggested alternatives in detail.
33, Artley	"… Your first exposure to the citizen-generated alternatives was when you first read the draft EA developed by the IDT which was after you had selected your Proposed Action. Therefore you did not "Consider" the citizen-generated alternatives as required by law. Of course you are not concerned because it's impossible to prove".	The original Proposed Action was developed by the District Ranger and IDT (Interdisciplinary Team). The Proposed Action was developed by looking at the differences between the existing conditions and the desired future conditions in the Forest Plan. The one alternative suggested by the public was analyzed in sufficient detail. NEPA does not require that a responsible official analyze all suggested alternatives in detail.
33, Artley	"… You knew before you started scoping you would reject all alternatives suggested by American citizens who own the Mt. Hood National Forest didn't you? Here are the reasonable alternatives that the public asked you to analyze in detail. You rejected them all because since you chose the Proposed Action before scoping started you knew it would be a waste of time and money analyzing the citizens' alternatives in detail knowing they would never be selected. Here's the one you rejected… Hidden Lake Trail Alternative (reducing potential impacts to the recreation experience)…"	This project is located on the Chequamegon-Nicolet National Forest (CNNF) in Wisconsin, not the Mt. Hood National Forest in Oregon. The Hidden Lake Trail is found in CNNF and the proposed Fourmile project. One alternative suggested by the public put a 1 mile no-harvest buffer around the Hidden Lake Trail. This was analyzed, but the Responsible Official determined this issue did not warrant further analysis because this alternative would not fully meet the purpose and need, would negatively impact the trail system in the long-term, and visual resources would already be mitigated with Forest Plan guidelines and project mitigations. NEPA does not require that a responsible official analyze all suggested alternatives in detail.

33, Artley	"… Once again Kirschbaum you show your colors. You reject the suggestion by the public to not log within 1 mile of the popular Hidden Lake Trail because you will loose [sic] 17% of the acres you wanted to log…".	There is no requirement to analyze multiple action alternatives in detail. One alternative suggested by the public put a 1 mile no-harvest buffer around the Hidden Lake Trail. This was analyzed, but the Responsible Official determined this issue did not warrant further analysis because this alternative would not fully meet the purpose and need, would negatively impact the trail system in the long-term, and visual resources would already be mitigated with Forest Plan guidelines and project mitigations.
33, Artley	"… As a retired USFS NEPA coordinator I know its routine for USFS NEPA documents to list all citizen generated alternatives in the "Considered but eliminated from detailed study" section. After all, how else would the Responsible Official guarantee justification to select the Proposed Action? This is certainly the case here".	Alternative actions provided are considered. An alternative suggested was to drop herbicide treatments in the proposed action that had been included for research purposes. In response to IDT discussions from that comment, herbicide was dropped from the Fourmile proposal.
33, Artley	"Request for changes to be made to the final NEPA document: Analyze the citizen-generated alternatives in detail. Not doing so backhands the people who supply the money for the salaries for you and the IDT members…Failure to do so will clearly violate 40 CFR 1503.4".	NEPA does not require that a responsible official analyze all suggested alternatives in detail. 40 CFR 1503.4 is specific to an EIS not an EA, the Fourmile proposed action is an EA.
33, Artley	"… USFS land managers know what to do right after an unauthorized, user-created road is discovered. They must be removed from the landscape completely (obliterated) and pile rocks and logs after they have been hydrologically stabilized so they won't appear (be rebuilt) again. How many years have your unauthorized roads existed? How many tons of sediment enter the streams each year because of your incompetence?"	Roads analysis and reasoning can be found summarized in the EA, full roads analysis is located in the Travel Analysis Report in the project record. Impacts to any resources from any proposed road actions are summarized in chapter 3 of the EA and can be found in the appropriate resource reports in the project record.
33, Artley	"… Ranger Kirschbaum, I cannot believe, you propose to add an unauthorized road to your road system. ATV riders are not road locators. They often build their "roads" in the worst places. They aren't concerned about water quality and obviously neither are you.	Roads decisions and reasoning can be found in the Travel Analysis Report in the project record.

	Allowing unauthorized roads to remain on the landscape clearly shows you authorize these roads…".	
33, Artley	"… On October 30, 2006 USFS Chief Bosworth announced the Four Threats to the Health of the Nation's Forests and Grasslands. Number 4 was "Unmanaged Recreation." Here's an excerpt… "Only a small number of OHV users who use their vehicles going cross-country leave lasting traces on the land. However, even this small percentage has created undesired impacts."…You can read more at: https://www.fs.fed.us/projects/four-threats/key-messages/unmanaged-recreation.shtml".	The Forest Plan covers the management and/or mitigation of roads and off-highway vehicles (OHVs) trails. The Fourmile project follows the Forest Plan standards related to roads and vehicle use.
33, Artley	"Request for changes to be made to the final NEPA document: Tell the public all unauthorized roads will be obliterated and rendered hydrologically stable…Failure to do so will violate 40 CFR 1500.2(f) because the Responsible Official did not "use all practicable means" "to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment".	The Forest Plan lists guidelines for various methods of decommissioning on pages 2-36 to 2-37. It is not a requirement that obliteration be used but is one of many methods and outcomes of decommissioning roads. Road closure strategies vary depending on the terrain and vegetation. Gates, large rocks, and earthen berms are three methods of road closures or decommissioning. All reasonable and fiscally responsible efforts are done to ensure the closure of slated roads. Site-specific decommissioning plans will be made prior to implementation.

33. Artley	Attachment #	Artley Provided Reference	FS Review of Reference
33. Artley	1	"Al-jabber, Jabber M. "Habitat Fragmentation:: Effects and Implications" Clearcuts and forest fragmentation, Willamette NF, Oregon. From: Cascadia Wildland Project, Spring 2003 http://faculty.ksu.edu.sa/a/Documents/Habitat%20Fragmentation%20Effects%20and%20Implication.pdf"	This is a non-peer reviewed paper that broadly discusses habitat fragmentation and its potential impact on biodiversity of the forest. The 2004 CNNF Land and Resource Management Plan, addresses habitat fragmentation and the potential impacts to species through identification of Management Areas which include direction for a desired landscape that includes patch size. No new principles identified in this paper.
33.	1	"Anderson, P.G. 1996. "Sediment generation from forestry	Talks about timber harvest and impacts to

Artley		operations and associated effects on aquatic ecosystems" Proceedings of the Forest-Fish Conference: Land Management Practices Affecting Aquatic Ecosystems, May 1-4, 1996, Calgary, Alberta. http://www.alliance-pipeline.com/contentfiles/45____Sediment_generation.pdf "	streams and makes recommendations for reducing sediment. Recommendations include use of skyline logging instead of jammer logging to reduce road densities in steep terrain. Neither of these types of logging are used on the CNNF. Other measures such as placing avoiding drainage crossings, avoiding steep slopes, installing adequate road drainage devices, and stabilizing cut and fill slopes are all measures used by the CNNF to reduce sediment. Findings in this paper are consistent with CNNF forest plan standards and guidelines for road construction.
33. Artley	1	""Applying Ecological Principles to Management of the U.S. National Forests" Issues in Ecology Number 6 Spring 2000 http://www.watertalk.org/wawa/ecosci.html"	CNNF Forest Plan Management direction provides many guidelines or the protection of resources including soils, water, wildlife, biodiversity, etc. CNNF projects are consistent with Forest Plan direction and the information identified in this report. One example: CNNF Forest Plan Guidelines state, "Leave and protect existing downed logs greater than 10 inches in diameter (small end diameter) consistent with providing for management access (e.g. skid trails)," "Emphasize diversity, cover and (or) mast by reserving tree species such as hemlock, northern white cedar, white pine, red oak, American beech, hickory, ironwood, blue beech, yellow birch, paper birch and other species that may not have strong local or forest wide representation," and "Reserve all dead snags and live den trees up to 10 trees/snags per acre, unless they present a safety concern. Emphasize the

			largest snags and den trees available. Those snags felled for safety reasons should be left on site as coarse woody debris wherever possible.
33. Artley	1	"Barry, Glen, Ph.D. “Commercial Logging Caused Wildfires” Published by the Portland Independent Media Center, August 2002. http://portland.indymedia.org/en/2002/08/17464.shtml"	Opinion not science. Whether or not the U.S. Republican party blames environmentalists for western wildfires is not considered relevant to most CNNF projects.
33. Artley	1	"Barry, John Byrne. “Stop the Logging, Start the Restoration” from The Planet newsletter June 1999, Volume 6, Number 5 http://www.sierraclub.org/planet/199905/ecl1.asp"	Opinion not science. These comments are not relevant at the project level. These are policy matters any action on which would have to occur at levels much higher than the project - maybe at the level of the Legislative or Executive branches. CNNF Forest Plan Management direction provides many guidelines for the restoration and protection of resources including soils, water, wildlife, biodiversity, etc. CNNF projects are consistent with Forest Plan direction and approved budgets.
33. Artley	1	"Cushman, John H. Jr. “Audit Faults Forest Service on Logging Damage in U.S. Forests” New York Times, February 5, 1999 http://query.nytimes.com/gst/fullpage.html?res=9B00E2DF163BF936A35751C0A96F958260&sec=&spon=&pagewanted=print"	Opinion not science. This article was from 1999. Reports on an audit of logging activities. Article reports on the environmental damage that occurred during timber sales. There have been many changes since then. CNNF under a Forest Plan which includes mitigation and monitoring of management activities including timber sales on a regular basis. New Planning Rule also requires monitoring, and any CNNF specific projects include evaluation and monitoring needs. CNNF considers information/findings/recommendations from their current timber sale reviews when determining impacts
33.	1	"Higgins, Margot, “National forest logging is bad business,	This is an article that comments on a report that is

Artley		study says" Posted on CNN.com-Nature, March 16, 2000 http://www.colorado.edu/AmStudies/lewis/west/costlogging.pdf "	not contained in the link. It is an opinion piece, not relevant to the project
33. Artley	1	"Dombeck, Mike Ph.D. a message on ""Conservation Leadership" sent to all USFS employees on July 1, 1998 http://www.wvhighlands.org/VoicePast/VoiceAug98/Dombeck.Aug98.html "	This publication is an opinion piece, not science. This is a great speech by the Chief of the Forest Service in 1998. It is a policy level statement more applicable at a Forest Plan level than the project level. Statement doesn't conflict with current restoration policy.
33. Artley	1	"Ehrlich, Anne Ph.D., David Foster Ph.D. and Peter Raven Ph.D. 2002 "Scientists Seek Logging Ban on U.S.-Owned Land" New York Times, April 15, 2002 http://www.nativeforest.org/campaigns/public_lands/stb_5_30_02.htm "	This is a letter to President George Bush from 221 scientists urging him to stop logging on National Forest land. This is not new science or literature but opinion. It relates to the overall multiuse mission of the Forest Service and not to the site-specific project level. CNNF projects are consistent with Forest Plan direction and approved budgets.
33. Artley	1	"FOREST CONSERVATION NEWS TODAY, August 27, 2002 "Bush Fire Policy: Clearing Forests So They Do Not Burn" http://forests.org/archived_site/today/recent/2002/tiporefl.htm "	This editorial/opinion is on the Bush administration and alleged pandering to the timber industry. CNNF projects are consistent with Forest Plan direction and approved budgets.
33. Artley	1 & 19	"Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. ""Simplified Forest Management to Achieve Watershed and Forest Health: A Critique."" http://www.coastrange.org/documents/forestreport.pdf"	This is a Forest Plan level issue, and in fact, our Forest Plan did allocate a portion of the landbase to such reserves. CNNF projects are consistent with Forest Plan direction and approved budgets.
33. Artley	1	"Franklin, Jerry F. Ph.D. and James K. Agee Ph.D. 2007. "Forging a Science-Based National Forest Fire Policy." Issues in Science and Technology. A National Wildlife Federation publication sponsored by the Bullitt Foundation http://www.coastrange.org/documents/forestreport.pdf "	This is an opinion piece on development of a national policy for wildfire management, not science. Not relevant to most CNNF projects because wildfire/fuels management are not part of the purpose and need. Also, this is a policy

			piece and something that needs and is addressed by Forest Plans and approved budgets.
33. Artley	1	"Giuliano, Jackie Alan, Ph.D. “Fire Suppression Bush Style: Cut Down the Trees!” Environmental News Service, 2008. http://www.ens-newswire.com/"	Part of this link is opinion piece on the policy that the Bush administration was setting forth in 2002 with the Healthy Forest Restoration Act and not new science. This quotation along with many others provided from the commenter, Mr. Artley, are really geared towards large picture policy changes within the Forest Service and National Forest Use and Planning. Projects on the CNNF are consistent with our Forest Plan and approved budgets.
33. Artley	1	"Government Accounting Office “Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats” GAO/RCED-99-65 http://www.gao.gov/archive/1999/rc99065.pdf"	This report is focused on the western portion of the united states including the need to address catastrophic wildfires. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of strategies to reduce the threat.
33. Artley	1	"Gorte, Ross W. Ph.D. “Forest Service Timber Sale Practices and Procedures: Analysis of Alternative Systems.” A Congressional Research Service (CRS) report, October 30, 1995. http://www.ncseonline.org/NLE/CRS/detail.cfm?do=do&OrderBy=Date&Category=Forests&CRScode=&Title=&Authors=&Keyword=&quickKeyword=&MaxCount=32&start=21"	The references to western conditions are not relevant here. The species mentioned do not grow here and he offers no evidence that the alleged forest health issues and their reported connections to timber harvesting exist in Wisconsin forests. The alleged bias is an issue that would be addressed at the highest levels, not the project level. The Knutson-Vandenberg Act was passed by Congress and signed by the President. It can only be abolished legislatively.
33. Artley	1	"Hanson, Chad Ph.D., “Commercial Logging Doesn't Prevent Catastrophic Fires, It Causes Them.” Published in the New York Times, May 19, 2000 http://www.commondreams.org/views/051900-101.htm"	Opinion piece. This comment is largely based on western United States examples that are not relevant to Northern Wisconsin. See response to Attachment 1, publication 24.

33. Artley	1	"Hanson, Chad, Ph.D. “National Forest Protection” Environment Now (see picture on last page) http://www.environmentnow.org/forest.html "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	1	"Hanson, Chad Ph.D., “Logging Industry Misleads on Climate and Forest Fires.” Guest Commentary in New West, July 11, 2008 http://www.newwest.net/topic/article/logging_industry_misleads_on_climate_and_forest_fires/C41/L41/"	These are opinions and not science based. This comment is largely based on western United States examples that are not relevant to Northern Wisconsin.
33. Artley	1	"Harvey, A. E., M. J. Larsen, and M. F. Jurgensen “Distribution of Ectomycorrhizae in a Mature Douglas-fir/larch Forest Soil in Western Montana” Forest Science, Volume 22, Number 4, 1 December 1976 , pp. 393-398(6) http://www.ingentaconnect.com/content/saf/fs/1976/00000022/00000004/art00007;jsessionid=l2sdf2hphia2.alexandra"	Northwestern Montana ectomycorrhizae study on limestone-based soils in an undisturbed 250 year old Douglas Fir/Larch timber type on a 55 % slope, so is not directly applicable to the CNNF landscape. This introduction to this 1976 study suggests that increased wood fiber demands and efforts to remove more fiber at harvest, or broadcast burning to reduce hazardous fuel after harvest, potentially reduces the organic parent materials (litter and wood residues) available for soil-formation processes. This study did not address logging or woody residue removal directly but attempts to understand functions of organic reserves on the activities of ectomychorrizal fungi. It found that charcoal and organic matter reserves contained in the soil had a strong stimulatory effect on the formation and activity of ectomychorrhizae, All CNNF project soil effects analysis routinely addresses biomass removal and prescribed fire where proposed.
33. Artley	1	"Houston, Alan Ph.D., ""Why Forestry is in Trouble with the Public."" Evergreen magazine, October 1997. http://www.evergreenmagazine.com/news/quotable_quotes.ht	These are opinions and not science based. Projects on the CNNF are consistent with our Forest Plan and approved budgets.

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33. Artley	1	"H. R. 1494 text. April 4, 2001 http://www.agriculturelaw.com/legis/bills107/hr1494.htm"	These are findings of Congress. All CNNF projects are subject to the National Environmental Policy Act, thus, the direct, indirect and cumulative effects of projects will be analyzed.
33. Artley	1	"Hudak, Mike Ph.D. “From Prairie Dogs to Oysters: How Biodiversity Sustains Us” from his book review of The Work of Nature: How the Diversity of Life Sustains Us by Yvonne Baskin, 1997 Newsletter of Earth Day Southern Tier, February/March 1999, p. 2 http://www.mikehudak.com/Articles/FromPrairieDogs9902.html"	This is a book review on the work of nature. It is opinion and not science based and is specific to ranching and prairie dog removal, neither of which occur on the CNNF.
33. Artley	1	"Huff, Mark H. Ph.D.; Ottmar, Roger D.; Alvarado, Ernesto Ph.D. Vihnanek, Robert E.; Lehmkuhl, John F.; Hessburg, Paul F. Ph.D. Everett, Richard L. Ph.D. 1995. “Historical and current forest landscapes in eastern Oregon and Washington. Part II: Linking vegetation characteristics to potential fire behavior and related smoke production” Gen. Tech. Rep. PNW-GTR-355. USDA Forest Service, Pacific Northwest Research Station. https://ir.library.oregonstate.edu/dspace/bitstream/1957/4706/1/PB96155213.pdf"	This article is very specific to Eastern Oregon and Washington. It refers to steep watershed terrain and dry western forest types that are significantly different to the ecosystems in the lake states.
33. Artley	1	"Ingalsbee, Timothy Ph.D. ""Logging for Firefighting: A Critical Analysis of the Quincy Library Group Fire Protection Plan."" Unpublished research paper. 1997. http://www.fire-ecology.org/research/logging-for-firefighting_2.htm"	This article represents many opinions of the author. It also speaks specifically to the Western National Forests which are very different than Northern Wisconsin.
33. Artley	1	"Ingalsbee, Timothy Ph.D. 2000. “Commercial Logging for Wildfire Prevention: Facts Vs Fantasies” http://www.fire-ecology.org/citizen/logging_and_wildfires.htm"	This is an opinion piece not science. Most CNNF projects do not propose commercial logging for wildfire prevention. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of

			strategies to reduce the threat.
33. Artley	1	"Ingalsbee, Timothy Ph.D. “Logging without Limits isn't a Solution to Wildfires” published in the Portland Oregonian, August 6, 2002 http://www.klamathforestalliance.org/Documents/loggingwithoutlimits.html"	This is an opinion piece not science. Most CNNF projects do not propose commercial logging for wildfire prevention. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of strategies to reduce the threat.
33. Artley	1	"Ingalsbee, Timothy Ph.D. “The wildland fires of 2002 illuminate fundamental questions about our relationship to fire.” The Oregon Quarterly, Winter 2002 http://www.fire-ecology.org/research/wildfire_paradox.pdf "	This is an opinion piece not science. Most CNNF projects do not propose commercial logging for wildfire prevention. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of strategies to reduce the threat.
33. Artley	1	"Ingalsbee, Timothy Ph.D. ""Fanning the Flames! The U.S. Forest Service: A Fire-Dependent Bureaucracy."" Missoula Independent. Vol. 14 No. 24, June 2003 http://www.fire-ecology.org/research/USFS_fire_dependent.html"	These are opinions and not science based. Most CNNF projects do not propose commercial logging for wildfire prevention. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of strategies to reduce the threat.
33. Artley	1	"Ingalsbee, Timothy Ph.D. 2005. “A Reporter's Guide to Wildland Fire.” Published by the Firefighters United for Safety, Ethics, and Ecology (FUSE), January 2005 http://209.85.173.104/search?q=cache:FuTKT_jqv2oJ:www.fire.uni-freiburg.de/media/A%2520Reporters%2520Guide%2520to%2520Wildland%2520Fire.pdf+ph.d.+%22fuels+reduction%22,+%22commercial+logging%22&hl=en&ct=clnk&cd=19&gl=us"	This opinion article mainly focuses on timber harvesting and fires in the West and is not applicable to the CNNF. Most CNNF projects do not call for the removal old growth trees, nor do they propose to create densely-stocked even-aged plantations of young conifers. Projects on the CNNF are consistent with our Forest Plan and approved budgets.
33. Artley	1	"Jalkotzy, M.G., P.I. Ross, and M.D. Nasserden. 1997. “The Effects of Linear Developments on Wildlife: A Review of Selected Scientific Literature.” Prepared for Canadian Association of Petroleum Producers. Arc Wildlife Services	Grizzly bears are not resident to Wisconsin. Wolverines are rarely observed in Wisconsin and are not resident to the State. A large majority of the other species addressed by this document do

		Ltd., Calgary. 115pp. http://emr.gov.yk.ca/pdf/bmp_the_effects_of_llinear_developments_on_wildlife_a_literature_review.pdf"	not exist in Wisconsin or the project area. The remaining species that do occur in Wisconsin, however, are either common throughout the State, or Federally or State listed. Any rare, Federally or State listed species occurring within specific project areas on the CNNF are addressed and evaluated to determine potential impacts and protective measures.
33. Artley	1	"Keene, Roy "Logging does not prevent wildfires" Guest Viewpoint, the Eugene Register Guard January 11, 2009 http://www.highbeam.com/doc/1G1-192070397.html"	Opinion not science. Refers to Western US Forests and the forest types in the West. Most CNNF projects do not propose commercial logging for wildfire prevention. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of strategies to reduce the threat.
33. Artley	1	"Keene, Roy Restorative Logging? "More rarity than reality" Guest Viewpoint, the Eugene Register Guard March 10, 2011 http://eugeneweekly.com/2011/03/03/views3.html "	This is an opinion piece not science. Most CNNF projects do not propose commercial logging for wildfire prevention. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of strategies to reduce the threat.
33. Artley	1	"Keppeler, Elizabeth T. Robert R. Ziemer Ph.D., and Peter H. Cafferata ""Effects of Human-Induced Changes on Hydrologic Systems."" An American Water Resources Association publication, June 1994 http://www.fs.fed.us/psw/publications/ziemer/Ziemer94a.PDF"	The paper cited is actually titled "Changes in Soil Moisture and Pore Pressure after Harvesting a Forested Hillslope in Northern California". The citation above is taken from the papers introduction. The study addresses whether timber felling and skyline yarding alone can significantly affect the physical properties that govern hillslope drainage processes on 30-70% slopes with a redwood/douglas-fir forest type in coastal northwestern California. Soils are loam over clay loams with 35 -45% clay in the subsoil.

			This study is not applicable to the CNNF climate, terrain, vegetation, soils, or harvest methods.
33. Artley	1	"Klein, Al 2004. Logging Effects on Amphibian Larvae Populations in Ottawa National Forest. http://www.nd.edu/~underc/east/education/documents/AKlein2004Pre-loggingsurveyofamphibianlarvaeinvernalpools.pdf"	This paper is applicable to the Chequamegon-Nicolet National Forest. It discusses the potential effects from logging on amphibian populations. It does not present any management recommendations. The CNNF Forest Plan has guidelines for timber management around woodland ponds that address the concerns raised in this paper.
33. Artley	1	"Laverty, Lyle, USDA Forest Service and Tim Hartzell U.S. Department of the Interior "A Report to the President in Response to the Wildfires of 2000", September 8, 2000. http://www.fs.fed.us/emc/hfi/president.pdf"	This report mainly focuses on timber harvesting and fires in the West. Most CNNF projects do not propose commercial logging for wildfire prevention. It is not relevant to most of the CNNF projects, however, where there are threats identified, the CNNF includes a variety of strategies to reduce the threat.
33. Artley	1	"Lawrence, Nathaniel, NRDC senior attorney "Gridlock on the National Forests" Testimony before the U.S. House of Representatives Subcommittee on Forests and Forest Health (Committee on Resources) December 4, 2001. http://www.nrdc.org/land/forests/tnl1201.asp"	This is a transcript of a presentation before the U.S. House of Representatives Subcommittee on Forests and Forest Health. This is not new science or literature but opinion. It relates to the overall discussion on the Healthy Forest Restoration Act legislation and not to site specific project level impacts. Includes some statements about salvage logging and how it might result in impacts to a variety of resources, but it is specific to to salvage in areas impacted by wildfire. There are other specific resources mentioned such as soil and potential impacts. CNNF projects comply with NEPA and the Forest Plan and site-specific measures are identified to protect resources identified.

33. Artley	1	"Leitner, Brian. “Logging Companies are Responsible for the California Wildfires.” the Democratic Underground, October 30, 2003. http://www.democraticunderground.com/articles/03/10/30_logging.html"	Opinion not science. Refers to Western US Forests and the forest types in the West as well as harvesting large mature trees in a final harvest. Not specific to the CNNF.
33. Artley	1	"Long, Richard D., U.S. Department of Agriculture Office of Inspector General ""Western Region Audit Report: Forest Service National Fire Plan Implementation"" Report No. 08601-26-SF, November 2001. http://maps.wildrockies.org/ecosystem_defense/Resources_Species_Topics/Fire/Misuse%20of%20Fire%20Plan%20funds.pdf"	2001 Office of the Inspector General's report on its audit of the Forest Service's implementation of the National Fire Plan. The report found the Forest Service incorrectly calculated the amount of funding needed to effectively achieve its most efficient level of firefighting capability. The report also found the Forest Service did not establish sufficient controls to ensure projects using funds to rehabilitate and restore areas burned in 2000 were eligible in accordance with the National Fire Program direction. Recommendations were made to rectify findings.
33. Artley	1	"Mann, Charles C. Ph.D. and Mark L. Plummer Ph.D. “Call for 'Sustainability' in Forests Sparks a Fire” Science 26 March 1999: Vol. 283. no. 5410, pp. 1996 - 1998 http://www.sciencemag.org/cgi/content/summary/283/5410/1996"	1999 opinion / article relating to how the Forest Service should manage for ecological sustainability. This addresses the multiuse mission of the Forest Service. This quotation along with many others provided from the commenter, Mr. Artley, are really geared towards large picture policy changes within the Forest Service and National Forest Use and Planning. These articles do not have any relevance to site specific actions or effects. Projects on the CNNF are consistent with our Forest Plan and approved budgets.
33. Artley	1	"Maser, C. Ph.D., and J. M. Trappe Ph.D. “The Seen and Unseen World of the Fallen Tree”, 1984 USDA Forest Service, GTR-PNW-164	This study is mainly in reference to the Douglas-fir (Pseudotsuga menziesii) dominated ecosystems of the Pacific Northwest and the

		http://www.fs.fed.us/pnw/publications/pnw_gtr164/"	importance of large woody debris on the forest floor. The Chequamegon Nicolet National Forest does not have Douglas-fir as a forest component. However, fallen trees do contain numerous organisms that are important to the forest ecosystem. Projects on the CNNF are consistent with our Forest Plan which includes measures to protect and maintain the presence of rotting wood/fallen trees. One example: CNNF Forest Plan Guidelines state, "Leave and protect existing downed logs greater than 10 inches in diameter (small end diameter) consistent with providing for management access (e.g. skid trails)," "Emphasize diversity, cover and (or) mast by reserving tree species such as hemlock, northern white cedar, white pine, red oak, American beech, hickory, ironwood, blue beech, yellow birch, paper birch and other species that may not have strong local or forest wide representation," and "Reserve all dead snags and live den trees up to 10 trees/snags per acre, unless they present a safety concern. Emphasize the largest snags and den trees available. Those snags felled for safety reasons should be left on site as coarse woody debris wherever possible.
33. Artley	1	"Maser, C. Ph.D., R. F. Tarrant, J. M. Trappe Ph.D., and J. F. Franklin Ph.D. 1988 “The Forest to the Sea: A Story of Fallen Trees” USDA Forest Service, GTR-PNW-GTR-229 http://www.fs.fed.us/pnw/publications/pnw_gtr229/"	These are excerpts from technical reports written in 1998 by the Forest Service - Pacific Northwest Research Station. These technical reports describe the differences between managed and unmanaged forests and in particular in the western US. The Forest Service has a multi-use mission and provides / allows different resource

			uses across the FS lands. For example, depending on the area and resources, some National Forests are managed for mostly recreation experiences such as hiking or outfitter and guide. In other area there may be mining or grazing. On the Chequamegon Nicolet National Forest, there are some management areas where logging is not permitted such as wilderness areas and some areas logging is permitted. Also see reference above (1-42).
33. Artley	1	"McIntosh, B.A., J.R. Sedell, J.E. Smith, R.C. Wissmar S.E. Clarke, G.H. Reeves, and L.A. Brown "Management history of eastside ecosystems: changes in fish habitat over 50 years, 1935-1992." 1994 GTR-321 93-181 http://www.fs.fed.us/pnw/publications/pnw_gtr321/"	This study is mainly in reference to stream systems in the Pacific Northwest. From 1934 to 1942, the Bureau of Fisheries surveyed over 8000 km of streams in the Columbia River basin to determine the condition of fish habitat. To evaluate changes in stream habitat over time, a portion of the historically surveyed streams in the Grande Ronde, Methow, Wenatchee, and Yakima River basins were resurveyed from 1990 to 1992. This paper is specific to the Pacific NW. The CNNF Forest Plan has guidelines for timber management that specifically address similar concerns related to forest management activity and water quality and fisheries.
33. Artley	1	"Moring, John R. Ph.D. 1975. "The Alsea Watershed Study: Effects of Logging on the Aquatic Resources of Three Headwater Streams of the Alsea River, Oregon – Part III." Fishery Report Number 9 Oregon Department of Fish and Wildlife. http://www.for.gov.bc.ca/hfd/library/ffip/Moring_JR1975b.pdf"	Paper discusses effects of logging operations in areas with small headwater streams. Recommendations are made to mitigate negative effects (changes in temperature, detrimental effects on coho salmon and steelhead trout eggs, low surface and intragravel dissolved oxygen concentrations) to streams. These include: buffer strips to prevent direct physical changes and

			indirect biological changes in the stream environment; designing roads to minimize their function as a source of excess sediment and mass transport of material in subsequent years; whenever possible, no felling into or across the stream itself, or onto the immediate bank; no logs yarded across or through streams; removing excess logging debris from stream as soon as possible after felling; consulting with the State fisheries agency and/or district biologists.
33. Artley	1	"Naeem, Shahid Ph.D., F.S. Chapin III Ph.D., Robert Costanza Ph.D., Paul R. Ehrlich Ph.D., Frank B. Golley Ph.D., David U. Hooper Ph.D. J.H. Lawton Ph.D., Robert V. O'Neill Ph.D., Harold A. Mooney Ph.D. Osvaldo E. Sala Ph.D., Amy J. Symstad Ph.D., and David Tilman Ph.D. ""Biodiversity and Ecosystem Functioning: Maintaining Natural Life Support Processes."" Issues in Ecology No. 4. Fall 1999. http://www.esa.org/science/Issues/FileEnglish/issue4.pdf"	This is an article from 1999 that stresses the importance of biodiversity. Some of the examples used in article are converting rain forest to a monoculture of banana plantation, these types of ecosystems are not found on the CNNF. All CNNF projects follow Forest Plan standards and guidelines which are required courses of action to promote the achievement of Forest plan objectives and goals such as ensuring healthy and sustainable ecosystems.
33. Artley	1	"Nappier, Sharon. Lost in the Forest: How the Forest Service's Misdirection, Mismanagement, and Mischief Squanders Your Tax Dollars. Taxpayers for Common Sense, 2002. http://www.taxpayer.net/forest/lostintheforest/lostintheforest.pdf"	Can't find ref. Link takes to http://www.palowireless.com/ Timber is sold on these Forests by a competitive, sealed bidding process resulting in stumpage prices reflecting fair market values.
33. Artley	1	"Noble, Ian R. and Rodolfo Dirzo Ph.D. ""Forests as Human-Dominated Ecosystems."" Science Vol. 277. No. 5325, pp. 522 - 525. 25 July 1997. http://www.sciencemag.org/cgi/content/abstract/277/5325/522?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=logging&searchid=1136659907310_5043&FIRSTIN	Interesting article on agro forestry, forestry in tropical regions and sustainable forestry. This literature does not generally apply to the CNNF, unless we are converting any forest land to non-forest land. The CNNF Forest Plan has guidelines for timber management which mitigate concerns

		DEX=0&journalcode=sci"	similar to those expressed in this article. For instance, the Forest Plan sets aside some of the forest to be managed on much longer rotations than normal.
33. Artley	1	"Northup, Jim. 1999. ""Public Wants More Wilderness, Less Logging on Green Mountain NF"". Press Release by Forest Watch, a Vermont-based environmental organization. http://www.forestwatch.org/content.php?id=10"	This is discussing Forest Management on the Green Mountain National Forest, White Mountain National Forest and the opinion of a poll in the New England states. This article is discussing the multiple use mission of the Forest Service and is not relevant to the project level.
33. Artley	1	"Okoand Ilan Kayatsky, Dan. “Fight Fire with Logging?” Mother Jones, August 1, 2002 http://www.motherjones.com/news/feature/2002/08/fireplan.html"	Opinion not science. Opposes harvest of large mature trees in the name of fuels reduction. Most CNNF projects do not propose commercial logging for wildfire prevention.
33. Artley	1	"Platt, Rutherford V. Ph.D., Thomas T. Veblen Ph.D., and Rosemary L. Sherriff “Are Wildfire Mitigation and Restoration of Historic Forest Structure Compatible? A Spatial Modeling Assessment” Published Online: by the by Association of American Geographers. Sep. 8, 2006 http://www.ingentaconnect.com/content/routledg/anna/2006/00000096/00000003/art00001"	From the reference: "This study evaluates where both wildfire mitigation and restoration of historic forest structure are potentially needed in the ponderosa pine-dominated montane forest zone of Boulder County, Colorado." In general, the subject of wildfire prevention and its relationship to historic forest structure may be relevant at a larger than project scale, such as Forest Plan or regional scale. The CNNF does not have ponderosa pine and so information is not relevant to Wisconsin forests.
33. Artley	1	"Powell, Douglas S. Ph.D, Joanne L. Faulkner, David R. Darr, Zhiliang Zhu Ph.D. and Douglas W. MacCleery. 1992. ""Forest Resources of the United States."" USDA Forest Service. Rocky Mt. Forest and Range Experiment Station. Gen. Tech. Rep. RM-234. http://www.fs.fed.us/rm/pubs_rm/rm_gtr234.html"	This is a partial quote from a FS assessment of all the forest resources in the United States. The full statement is: "Because most National Forests were created from unclaimed public lands in the West, around the turn of the century, most (three-quarters) of the current National Forest timberland is in the West. When the National

			Forest lands were reserved from entry, much of the more accessible, highly productive forested area was no longer in the public domain. As a consequence, National Forest timberland is, on average, of lower productivity and on steeper, higher elevation terrain than are private timberlands." This is not an applicable issue for the CNNF as steep slopes, forest productivity, and elevation of forested land does not substantially change between ownerships.
33. Artley	1	"Raven, Peter, Ph.D., Jane Goodall, C.B.E., Ph.D., Edward O. Wilson, Ph. D. and over 600 other leading biologists, ecologists, foresters, and scientists from other forest specialties. From a 1998 letter to congress. http://www.saveamericasforests.org/resources/Scientists.htm"	These quotations are opinions to Congress and not new science. This is asking for a bill to change the multiuse mission of the Forest Service and not conduct any timber harvest. This quotation along with many others provided from the commenter, Mr. Artley, are really geared towards large picture policy changes within the Forest Service and National Forest Use and Planning. These articles do not have any relevance to actions or effects from site specific projects.
33. Artley	1	"Raven, Peter, Ph.D., from his February 9, 2001 letter to Senator Jean Carnahan http://www.saveamericasforests.org/Raven.htm"	This is an opinion letter by Peter Raven to a congresswomen and not new science. This is basically a letter to Congress asking for a bill to change the multiuse mission of the Forest Service and not conduct any timber harvest. This letter is geared towards large picture policy changes within the Forest Service and National Forest Use and Planning. These articles do not have any relevance to actions or effects from site specific projects.
33.	1	"Roberson, Emily B. Ph.D., Senior Policy Analyst, California	Interesting letter that seeks to clarify the position

Artley		Native Plant Society Excerpt from a letter to Chief Dale Bosworth and 5 members of congress http://www.plantsocieties.org/PDFs/Fire%20letter%20CNPS%208.02%20letterhead.pdf"	of CNPS on the use of harvesting treatments to reduce fuel loads and wildfire occurrence in California. The species and ecosystems identified and discussed are not similar to the CNNF.
33. Artley	1	"Roelofs, Terry D. Ph.D. Testimony for the California State Water Board and Regional Water Quality Control Boards Regarding Waivers of Waste Discharge Requirements on Timber Harvest Plans. August 2003. http://74.125.113.132/search?q=cache:QNy_aih1RxEJ:edennapa.org/thp/roelofstestimony.doc+%22timber+harvest%22+ph.d.+adverse&hl=en&ct=clnk&cd=5&gl=us"	As the reference document title implies; it deals with activities related to timber harvest and affects to the waters of California and the Pacific Northwest. The document specifically focuses on the effects to coho salmon. This document is not applicable to the landscape of the Chequamegon-Nicolet National Forest as a whole. Coho salmon do not exist in the project area or in the water bodies of the Chequamegon-Nicolet National Forest.
33. Artley	1	"Rudzitis, Gundars. 1999 “Amenities Increasingly Draw People to the Rural West” Rural Development Perspectives, vol. 14, no. 2 http://www.ers.usda.gov/publications/rdp/rdpsept99/rdpsept99b.pdf"	This is a piece of literature describing how people move to a rural place due to many factors including the clean environment and environmental character. While this paper is specific to the west, the CNNF Forest Plan has guidelines that specifically address similar concerns related to forest management activity and maintaining visual and environmental quality and these measures are incorporated into projects where relevant.
33. Artley	1 & 19	"Scott, Mark G. “Forest Clearing in the Gray’s River Watershed 1905-1996” A research paper submitted in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE in GEOGRAPHY Portland State University, 2001 http://www.markscott.biz/papers/grays/chapter1.htm "	This is a piece of literature describing how forest management practices such as clearcutting result in a simplification of the forest ecosystem. While the paper examines and compares old growth forest in the western US, the principles and findings are broadly applicable to anywhere in the US. The CNNF Forest Plan has guidelines that specifically address similar concerns related

			to forest management activity and maintaining biodiversity and these measures are incorporated into projects where relevant.
33. Artley	1	"Short, Brant, Ph.D. and Dayle C. Hardy-Short Ph.D. ""Physicians of the Forest"": A Rhetorical Critique of the Bush Healthy Forest Initiative" Electronic Green Journal, Issue #19, December 2003 http://repositories.cdlib.org/uclalib/egj/vol1/iss19/art3/"	This comment speaks toward opinions about the Healthy Forest Initiative and does not pertain to the project.
33. Artley	1	"Sierra Club. 2005 "Ending Commercial Logging on Public Lands" http://northcarolina.sierraclub.org/pisgah/conservation/ecl.html"	There are no virgin forests involved in this proposal. The other topics mentioned are beyond the scope of a project.
33. Artley	1	"Slaymaker, Olav Ph.D. "Assessment of the Geomorphic Impacts of Forestry in British Columbia" AMBIO: A Journal of the Human Environment 29(7):381-387. 2000 http://www.bioone.org/doi/abs/10.1579/0044-7447-29.7.381 "	This paper addresses the nature of the land transformation in British Columbia from a geomorphologist's perspective and suggests policy implications for sustainable management of the land. The paper assesses water impacts such as: fine sediment, coarse sediment and large woody debris transport, and terrain stability through gully and mass movement processes. These are all issues related to very steep topography which is not generally present on the CNNF. Principles are broadly applicable to the CNNF and are addressed in a similar fashion with Wisconsin's BMPS and forest plan standards and guidelines for all projects.
33. Artley	1	"Stahl, Andy. "Reducing the Threat of Catastrophic Wildfire to Central Oregon Communities and the Surrounding Environment." Testimony before the House Committee on Resources, August 25, 2003 http://www.fseee.org/index.html?page=http%3A//www.fseee.org/eactivist/testimony082503.shtml"	These are quotations from an article and testimony by Andy Stahl from FSEEE to Congress regarding reducing the threat from catastrophic wildfires in Oregon. FESEE's recommendation to Congress was to put more pressure on society to be involved with home

			protection, taking a role in how their homes are built in a fire adapted system and also a more collaborative approach. This testimony to Congress, along with many other items provided from the commenter, Mr. Artley, are really geared towards large picture policy changes within the Forest Service and National Forest Use and Planning. This testimony is geared to fire policy in western ecosystems and is not particularly relevant to the CNNF.
33. Artley	1	"Strickler, Karyn and Timothy G. Hermach, “Liar, Liar, Forests on Fire: Why Forest Management Exacerbates Loss of Lives and Property” Published by CommonDreams.org, October 31, 2003 http://www.commondreams.org/scriptfiles/views03/1031-10.htm"	This article is opinion not science. An excerpt "As forest fires rage, so does the debate about how best to suppress fire, reduce its threat and manage our forests. And the answer is -- DON'T! Don't "manage" our public forests -- and forest fires will be M-I-N-I-M-I-Z-E-D." This article is geared to a broad scale discussion/opinion about the need for fire suppression and logging on National Forests. It is geared towards large picture policy changes within the Forest Service and National Forest Use and Planning and not relevant at the project scale.
33. Artley	1	"Taxpayers for Common Sense. “From the Ashes: Reducing the Harmful Effects and Rising Costs of Western Wildfires” Washington DC , Dec. 2000 http://www.ourforests.org/fact/ashes.pdf"	Link does not work. Further research found a possible different version at https://www.fusee.org/wp-content/uploads/2018/06/From-the-Ashes-Rising-Suppression-Costs-.pdf This report published in 2000 by a private group (“TAXPAYERS FOR COMMON SENSE”) is an opinion piece on broad policies and focuses primarily on government actions out west and is not applicable at the Forest or project level nor

			does the commenter provide justification for its applicability to the midwestern state of Wisconsin.
33. Artley	1	"Thomas, Craig. “Living with risk: Homeowners face the responsibility and challenge of developing defenses against wildfires.” Sacramento Bee newspaper, July 1, 2007. http://www.sierraforestlegacy.org/NR_InTheNews/SFLIP_2007-07-01_SacramentoBee.php"	This article speaks specifically toward fire and fuels management on in the Tahoe Basin in California. The area is much different than Northern Wisconsin in fuels and terrain.
33. Artley	1	"University of California; SNEP Science Team and Special Consultants 1996 “Sierra Nevada Ecosystem Project: Final Report to Congress” Volume 1, Chapter 4 – Fire and Fuels. http://ceres.ca.gov/snep/pubs/web/PDF/v1_ch04.pdf"	This article is very specific to the Sierra Nevada's. This ecosystem is very different than that of Northern Wisconsin due to soil type, vegetation, terrain, weather, and other factors.
33. Artley	1	"Vincent, James W. Ph.D., Daniel A. Hagen, Ph.D., Patrick G. Welle Ph.D. and Kole Swanser. 1995. Passive-Use Values of Public Forestlands: A Survey of the Literature. A study conducted on behalf of the U.S. Forest Service. http://www.icbemp.gov/science/vincent.pdf"	The subject of competing uses and allocations of National Forest lands is a Forest Plan level subject and was addressed in the 2004 revision of the Chequamegon-Nicolet Forest Plan.
33. Artley	1	"Voss, René “Getting Burned by Logging,” July 2002 The Baltimore Chronicle http://www.baltimorechronicle.com/firelies_jul02.shtml"	Another opinion piece about the need for logging as a wildfire prevention/severity reduction measure and geared towards western forests.
33. Artley	1	"Wuerthner, George. “Logging, thinning would not curtail wildfires” The Eugene Register-¬Guard, December 26, 2008 http://wuerthner.blogspot.com/2008/12/logging-thinning-would-not-curtail.html"	Another opinion piece about the need for logging as a wildfire prevention/severity reduction measure and geared towards western forests.
33. Artley	1	"Wuerthner, George “Who Will Speak For the Forests?” NewWest, January 27, 2009 http://www.newwest.net/topic/article/who_will_speak_for_the_forests/C564/L564/ "	An opinion article about the role of an "environmentalist" specific to a project (BCSP) on the Lolo National Forest in Montana. From the article "I don’t support the BCSP because no one has convinced me the proposed logging aspects of the plan won’t be degrading forest ecosystems." The subject of competing uses and allocations of National Forest lands is a Forest

			Plan level subject and was addressed in the 2004 revision of the Chequamegon-Nicolet Forest Plan.
33. Artley	1	"Ziemer, Robert R. Ph.D., ""Effect of logging on subsurface pipeflow and erosion: coastal northern California, USA."" Proceedings of the Chengdu Symposium, July 1992. IAHS Publication. No. 209, 1992 http://www.fs.fed.us/psw/publications/ziemer/Ziemer92.PDF"	This study about potential sediment flow and subsurface water flow and potential changes from logging is not applicable to the CNNF climate, terrain, vegetation, soils, or harvest methods. For example CNNF soils do not have subsurface pipes or pipeflow and the terrain is not susceptible to landslides.
33. Artley	1	"Martin, Rachel Ph.D. and 221 other Ph.D. Scientists. from an April 16, 2002 letter to President George W. Bush http://www.pabiodiversity.org/listserve/03-13-03.pdf"	This is a letter to President George Bush from 221 scientists urging him to stop logging on National Forest land. This is not new science or literature but opinion. It relates to the overall multiuse mission of the Forest Service and not the site-specific project level.
33. Artley	1	"Partridge, Arthur Ph.D., Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm "	These are statements from scientists to Congress requesting passage of a bill, Act to Save America's Forests (S. 977 and HR 1376). This is opinion on broad policies and not applicable at the Forest or project level.
33. Artley	1	"Elliot, W.J.; Page-Dumroese, D.; Robichaud, P.R. 1999. The effects of forest management on erosion and soil productivity. Proceedings of the Symposium on Soil Quality and Erosion Interaction, Keystone, CO, July 7, 1996. Ankeney, IA: Soil and Water Conservation Society. 16 p. http://forest.moscowfsl.wsu.edu/smp/docs/docs/Elliot_1-57444-100-0.html "	This reference provides an overview of current knowledge on the influence of forest management activities on soil erosion and related on-site impacts and the subsequent effects of those impacts on forest productivity. While the data used for this paper appears to be primarily from western landscapes, the principles apply to the CNNF. The soils report for CNNF projects include the types of factors identified in this reference as contributing to soil productivity.

33. Artley	1	"Forests Monitor, Environmental Impacts of Logging, 2006 (with photos) http://www.forestsmonitor.org/en/reports/550066/550083"	Part of an online publication by the non-governmental organization discussing social, environmental, economic and political impacts of transnational corporations on forests and forest peoples. This section summarizes environmental impacts of logging operations in countries like Papua New Guinea, Solomon Islands, and Cameroon. The paper focuses on forests as buffers that filter water and prevent soil erosion. Logging is implicated as a cause of global warming, drastic changes in precipitation, forest fires, impacts to marine environments, and loss of biodiversity.
33. Artley	1	"Hansen, Chad, Ending Timber Sales on National Forests: THE FACTS (FY '97) Published in the Earth Island Journal, 1999 http://www.johnmuirproject.org/pdf/Fy-1997-Economic-Report-Ending-Timber-Sales.pdf "	Can't find- page doesn't exist.
33. Artley	1	"WUERTHNER, GEORGE, "Why are Conservation Groups Advocating Logging Public Forests?" Published by Counterpunch, September 27, 2012 http://www.counterpunch.org/2012/09/27/why-are-conservation-groups-advocating-logging-public-forests/ "	Opinion piece about the author's disagreement with the pro-logging views of many conservation groups.
33. Artley	1	"'"Stop Drilling and Logging on Federal Lands While the Public is Kept Out" A petition targeted for Secretary of the Interior Sally Jewel and Secretary of Agriculture Tom Vilsack Posted at FORCECHANGE.COM, 2013 http://forcechange.com/86223/stop-drilling-and-logging-on-federal-lands-while-the-public-is-kept-out/ "	Petition addressed to the Secretaries of the Interior and Agriculture asking why mining, drilling, and logging were allowed during the 2013 federal shutdown, but federal lands were not open to the public.
33. Artley	1	"Conservation Groups Look to Hold Forest Service Accountable for Middle East Fork Logging Plan Published by Lowbagger, April 25, 2006 http://www.lowbagger.org/mideast.html"	Can't find- page doesn't exist.

33. Artley	1	"–“Photosynthesis is one of only two significant mechanisms for removing carbon dioxide from the atmosphere (the other being dissolution into water, leading to destructive ocean acidification). Carbon dioxide is released when trees are cut down, and deforestation accounts for at least 15 percent of global carbon emissions. Thus, cutting down trees is a double-whammy because we not only lose carbon capture capacity, but we release more carbon, too. An erroneous conventional view holds that young trees capture more dioxide than mature trees; therefore, we should cut down mature trees. However, for most species -- 97 percent of 403 tropical and temperate species -- the biggest trees increase their growth rates and sequester more carbon as they age. This conclusion is based on repeated measurements of 673,046 individual trees, some going back more than 80 years, on six continents We need all levels of government to start preserving forests -- and fast. In addition to switching from dirty to clean energy, President Obama should halt commercial logging on federal lands, eliminate biomass power plant subsidies that drive forest destruction, and permanently protect forests for carbon capture (in addition to forests' many other public benefits).” Trees Are Our Climate Saviors - So Stop Logging on Public Land 02/12/2014 The Huffington Post http://www.huffingtonpost.com/ellen-moyer-phd/trees-are-our-climate-logging_b_4775894.html l"	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	1	"Logging Impacts Published by Sierra Forest Legacy, 2012 http://www.sierraforestlegacy.org/FC_FireForestEcology/FFE_LoggingImpacts.php "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	1	"Pacific Salmonids: Major Threats and Impacts Published by NOAA fisheries Office of Protecte Resources, May 15, 2014 http://www.nmfs.noaa.gov/pr/species/fish/salmon.htm "	This article, pertaining to Pacific Salmonids in the Northwestern United States, is not relevant to the CNNF forest that resides in the Midwestern

			State of Wisconsin and has no Pacific Salmonids in the area.
33. Artley	1	"Global Deforestation Published by the University of Michigan, 01/04/2010 http://www.globalchange.umich.edu/globalchange2/current/lectures/deforest/deforest.html "	The link is broken, additional searches did not find alternate access to the page.
33. Artley	1	"Groups Challenge Industrial Logging of Pristine Wildlife Habitat Along South Fork Flathead River A Western Environmental Law Center Press Release, 2/28/2012 http://www.westernlaw.org/article/groups-challenge-industrial-logging-pristine-wildlife-habitat-along-south-fork-flathead-rive "	This news release is not applicable to the CNNF as it pertains to issues in the Western United States. Additionally, this article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	1	"Judge Halts Glacier Loon Timber Sale in Swan Valley Published in the Flathead Beacon, Sep 26, 2014 http://flatheadbeacon.com/2014/09/26/judge-halts-glacier-loon-timber-sale-swan-valley/ "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	1	"Judge stops 3 Montana logging projects over lynx By Matt Volz, Associated Press June 26, 2013 http://news.yahoo.com/judge-stops-3-montana-logging-141919567.html "	This news release is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	1	"Judge blocks Klamath logging plan By Don Thompson,Associated Press October 16, 2004 http://www.wildcalifornia.org/media/epic-in-the-news/judge-blocks-klamath-logging-plan/ "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	1	"Hansen, Chad Ph.D., The Big Lie: Logging and Forest Fires Published by the Earth Island Journal, spring 2000 issue http://yeoldeconsciousnessshoppe.com/art6.html "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	4	"Al-jabber, Jabber M. 2003 “Habitat Fragmentation: Effects and Implications” http://faculty.ksu.edu.sa/a/Documents/Habitat%20Fragmentation%20Effects%20and%20Implication.pdf "	This is a non-peer reviewed paper that broadly discusses habitat fragmentation and its potential impact on biodiversity of the forest. The 2004 CNNF Land and Resource Management Plan,

			addresses habitat fragmentation and the potential impacts to species through identification of Management Areas which include direction for a desired landscape that includes patch size. No new principles identified in this paper.
33. Artley	4	"Amaranthus, Mike P. Ph.D., Raymond M. Rice Ph.D., N. R. Barr and R. R. Ziemer Ph.D. ""Logging and forest roads related to increased debris slides in southwestern Oregon."" Journal of Forestry Vol. 83, No. 4. 1985. http://www.humboldt.edu/~rrz7001/pubs/Ziemer85.PDF"	As the paper title implies; this is a 20-year study on debris slides and landslides in mountainous terrain of the Klamath mountains in southwest Oregon; and would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"“Applying Ecological Principles to Management of the U.S. National Forests” Issues in Ecology Number 6 Spring 2000 http://www.watertalk.org/wawa/ecosci.html"	"Excerpt from article with no author; excerpt references Gibbons and Salo 1973 (An annotated bibliography of the effects of logging on fish of the Western United States and Canada), and Megahan and Kidd 1972 (Effects of logging and logging roads on erosion and sediment deposition from steep terrain. Journal of Forestry 70(3):136-141); would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics "
33. Artley	4	"Borga, M., F. Tonelli, G. Dalla Fontana and F. Cazorzi “Evaluating the Effects of Forest Roads on Shallow Landsliding” Geophysical Research Abstracts, Vol. 5, 13312,2003 http://www.cosis.net/abstracts/EAE03/13312/EAE03-J-13312.pdf"	Single page description of study on landslides; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Bowling, L.C., D. P. Lettenmaier, M. S. Wigmosta and W. A. Perkins “Predicting the Effects of Forest Roads on Streamflow using a Distributed Hydrological Model” from a poster presented at the fall meeting of the American Geophysica Union, San Francisco, CA, December 1996.	Results of effects model in mountainous areas of Northwest U.S.; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.

		http://www.ce.washington.edu/~lxb/poster.html"	
33. Artley	4	"By Dr. Seth Reice is Associate Professor of Biology in the Department of Biology and Curriculum in Ecology, University of North Carolina. From Press Conference with Senator Robert Torricelli, April 28, 1998, U.S. Capitol regarding the proposed Act to Save America's Forests (S. 977, HR 1376) "	This article, from 1998, is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	4	"Brister, Daniel. ""A Review and Comment on: Forest Service Roads: A Synthesis of Scientific Information, 2nd Draft, USDA Forest Service."" December 1998. http://www.wildlandscpr.org/forest-service-roads-synthesis-scientific-information-socio-economic-impacts "	Reference is providing comments on a broadscale publication "Forest Roads". His comments indicate that not enough analysis of the effects of roads had occurred, particularly with respect to mitigation costs and passive use values.
33. Artley	4	"Bunnell, Fred L. Ph.D., Kelly A. Squires and Isabelle Houde. 2004 ""Evaluating effects of large-scale salvage logging for mountain pine beetle on terrestrial and aquatic vertebrates."" Mountain Pine Beetle Initiative Working Paper 1. Canadian Forest Service. http://warehouse.pfc.forestry.ca/pfc/25154.pdf"	Working paper project level and site specific to mountainous watershed and basin in British Columbia; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Burns, James W., ""Some Effects of Logging and Associated Road Construction on Northern California Streams."" Transactions of the American Fisheries Society, Volume 1, Number 1, January 1972. http://www.fs.fed.us/psw/publications/4351/Burns72.pdf"	"Excerpt: "STUDY AREA Four small streams on the northern California coast were chosen for study (Figure 1): Bummer Lake Creek, South Fork Yager Creek, Little North Fork Noyo River, and South Fork Caspar Creek. They are located within 40 km of the ocean and drain watersheds ranging from 425 to 2,514 ha (Table 1). The watersheds are relatively steep, with canyon sides having mean slopes ranging from 36 to 49%. The coastal climate is characterized by heavy winter rainfall and dry summers." Citation is specific to mountainous regions of northern California; would not be applicable to upper Midwest landscape in northern Wisconsin due to

			differences in landscape characteristics. "
33. Artley	4	"Brown, George W. Ph.D., The Impact of Timber Harvest on Soil and Water Resources Dr. BROWN is the Forest Hydrologist, School of Forestry, Oregon State University http://andrewsforest.oregonstate.edu/pubs/pdf/pub1695.pdf "	This publication pertains to the Northwestern region and is not appropriate to apply to the Upper Midwest where the CNNF is located.
33. Artley	4	"From Forest Roads and Sediment Project PROJECT DURATION:1 January 2011 to 30 November 2019 Published by Virginia Tech University By W. Mike Aust,Ph.D., Kevin McGuire, Ph.D., M. Chad Bolding, Ph.D. and Scott Barrett, Ph.D. http://hydro.vwrrc.vt.edu/research/projects/forest-roads-and-sediment-project/ "	Water Quality and Watershed Impacts were analyzed in chapter 3 of the EA. Wisconsin's Forestry BMPs for Water Quality will be implemented, and guidelines for roads management will be followed.
33. Artley	4	"Dombeck, Mike Ph.D., US Forest Service Chief Remarks made to Forest Service employees and retirees at the University of Montana. February 1998."	Speech by political appointee (former USFS Chief); not a scientific report or paper
33. Artley	4	"EPA entry into the Federal Register: March 3, 2000 (Volume 65, Number 43) Page 11675, ""National Forest System Road Management."" http://www.epa.gov/fedrgstr/EPA-GENERAL/2000/March/Day-03/g5002.htm"	Excerpt is in fact from a Department of Agriculture Forest Service entry, not EPA; excerpt is taken from the supplementary background information section of the posting; posting was for "National Forest System Road Management and Transportation System; Proposed Rule and Notices"; now commonly referred to as the 2001 roads rule. 2001 roads rule set the standard and requirements that are currently followed for CNNF project development relative to transportation systems. CFR notice of comment opportunity on Forest Service Road Management. Proposed strategy would have forests analyze new and existing roads for need, decommission those not needed, improve those roads needed to limit effects to resources.
33.	4	"“Forest Fragmentation and Roads” Eastern Forest	Page from "The Forest Health Monitoring

Artley		Environmental Threat Assessment Center U.S. Forest Service - Southern Research Station http://www.forestthreats.org/publications/su-srs-018/fragmentation "	National Technical Reports: Examples of Analyses and Results from 2001-2004." It defines fragmentation as the direct loss of forest and the division of the remainder into smaller pieces. It talks about forest fragmentation affecting habitat quality for mammal, reptile, bird, and amphibian species in forests. Also talks about road fragmentation being of special interest because the effects of roads extend tens to hundreds of yards from the roads themselves. The 2004 CNNF Land and Resource Management Plan, addresses habitat fragmentation and the potential impacts to species through identification of Management Areas which include direction for a desired landscape that includes patch size. No new principles identified.
33. Artley	4	"Forman, Richard T. and Lauren E. Alexander “Roads and their Major Ecological Effects” Annual Review of Ecology and Systematics, Vol. 29: 207-231, November 1998 http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.ecolsys.29.1.207?cookieSet=1&journalCode=ecolsys.1"	The focus of the paper referenced is on primary road systems, which are equivalent to Forest Service arterial and collector roads. Transportation system focus in most CNNF projects is local roads that are low volume, single lane.
33. Artley	4	"Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. ""Simplified Forest Management to Achieve Watershed and Forest Health: A Critique."" A National Wildlife Federation publication sponsored by the Bullitt Foundation http://www.coastrange.org/documents/forestreport.pdf"	In this article, a multi-disciplinary group of scientists discuss ecosystem-based management approaches to keep watersheds and forests functioning properly. Article and information provided is consistent with CNNF road management and Forest Plan guides.
33. Artley	4	"Frey, David “Logging Won’t Halt Beetles, Fire, Report Says” NewWest.net, 3-03-10 http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/"	Article discusses mountain pine beetle epidemic in Colorado. Not Applicable

33. Artley	4	"Furniss, Michael J., Michael Love Ph.D. and Sam A. Flanagan ""Diversion Potential at Road-Stream Crossings."" USDA Forest Service. 9777 1814—SDTDC. December 1997. http://www.stream.fs.fed.us/water-road/w-r-pdf/diversionpntl.pdf"	Principles in this paper applicable to CNNF activities particularly with stream crossings on roads. CNNF road projects follow WI best management practices (BMPs) for water quality and the Forest Plan.
33. Artley	4	"Gable, Eryn “Battling beetles may not reduce fore risks – report” Land Letter, March 4, 2010 http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/ "	This article is an opinion piece that discusses the findings of a separate report that states that the occurrence of large fires in lodgepole pine and spruce-fir forests is mainly influenced by climatic conditions, particularly drought. Not Applicable to the lake states.
33. Artley	4	"Grace, Johnny M. III Ph.D. 2003. ""Minimizing the impacts of the forest road system."" In: Proceedings of the conference 34 international erosion control association; ISSN 1092-2806. [Place of publication unknown]: International Erosion Control Association: 301-310. http://www.srs.fs.usda.gov/pubs/ja/ja_grace011.pdf"	Commenter’s citation is an excerpt from the introduction of a study presented by Johnny M. Grace III Ph.D. Also included in the introduction, but not cited by the commenter is that “The purpose of this paper is to present and discuss the findings of a study conducted to assess the effectiveness of alternative sediment control treatments in a 42-month field experiment”. The citation provided by the commenter is not a finding of the study. Effects analysis relative to soils takes place on all CNNF projects.
33. Artley	4	"Gucinski, Hermann Ph.D., Michael J. Furniss, Robert R. Ziemer Ph.D. and Martha H. Brookes, Editors. 2001. ""Forest Roads: A Synthesis of Scientific Information."" USDA Forest Service, General Technical Report PNW-GTR-509. http://www.fs.fed.us/pnw/pubs/gtr509.pdf"	This technical report is made available to resource specialists for all project scale roads analyses on the CNNF.
33. Artley	4	"Hann, W.J. et al. 1997 Landscape dynamics of the Basin. Pp. 337-1,055 in: Quigley, T.M. and S.J. Arbelbide (eds.) An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II. USDA Forest Service, PNW-GTR-405	Body of the technical report not available; abstract, preface, science team members, volume contents, and acknowledgments is all that is posted on the web. Report appears to be focused on interior Columbia basin, portions of the

		http://www.fs.fed.us/pnw/pubs/gtr405/pnw_gtr405aa.pdf"	Klamath and Great basins; if so, it would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Haskell, David G. Ph.D. 1999 “Effects of Forest Roads on Macroinvertebrate Soil Fauna of the Southern Appalachian Mountains” http://www3.interscience.wiley.com/journal/119186338/abstract?CRETRY=1&SRETRY=0 "	The document discusses the macroinvertebrate soil fauna reduction near roads in the leaf litter in the Appalachian Mountains. Not applicable to most CNNF projects.
33. Artley	4	"Hawbaker, Todd J. Ph.D., Volker C. Radeloff Ph.D., Murray K. Clayton Ph.D., Roger B. Hammer Ph.D., and Charlotte E. Gonzalez-Abraham Ph.D. “Road Development, Housing Growth, and Landscape Fragmentation In Northern Wisconsin: 1937–1999” Ecological Applications: Vol. 16, No. 3, pp. 1222-1237. http://www.esajournals.org/doi/abs/10.1890/1051-0761%282006%29016%5B1222%3ARDHGAL%5D2.0.CO%3B2?journalCode=ecap"	Not applicable. This document pertains to road densities associated with housing development
33. Artley	4	"Ivins, Molly Creators Syndicate, August 3 1997 08 03 http://www.creators.com/opinion/molly-ivins/molly-ivins-august-3-1997-08-03.html"	This is an opinion piece on Congressional funding of road construction and supporting the timber industry. Article suggests that N.F. roads are paid for by tax payers. Access to the timber stand via road construction is an appraised cost to determine stumpage. A business practice conducted by all land owners who sell timber.
33. Artley	4	"Jones, Julia A. Ph.D., Frederick J. Swanson Ph.D. Beverley C. Wemple Ph.D., and Kai U. Snyder. ""Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks."" Conservation Biology 14, No. 1. 2000. http://smealsearch2.psu.edu/cache/papers/Business/627/http:zSzzSzwww.earthscape.orgzSzr2zSzscbzSzscb14_1zSzscb14-1_joj01zSzscb14-1_joj01.pdf/effects-of-roads-on.pdf/"	This document is not applicable to the CNNF. The paper is focused on mountainous landscapes in Andrews Experimental Forest in Oregon.

33. Artley	4	"Kahklen, Keith. ""A Method for Measuring Sediment Production from Forest Roads."" Pacific Northwest Research Station, USDA Forest Service. Research note PNW-RN-529, April 2001. http://www.fs.fed.us/pnw/pubs/rn529.pdf"	Pacific Northwest Research Station Research paper on methods for measuring sediment production from roads, it would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Karr, James R. Ph.D., Christopher A. Frissell Ph.D., Jonathan J. Rhodes, David L. Perry Ph.D. and G. Wayne Minshall Ph.D. Excerpt from a letter to the Subcommittee on Forests & Forest Health U.S. House of Representatives. 3 July, 2002. http://www.nativeforest.org/campaigns/wildfire_info_center/letter_from_beschta.htm"	Excerpt from letter to Congress that focuses on a report titled:"Wildfire and Salvage Logging; Recommendations for Ecologically Sound Post-Fire Salvage Management and Other Post-Fire Treatments on Federal Lands in the West". Most CNNF projects do not include a "post fire" salvage situation. Also, the CNNF is located in the upper Midwest landscape of northern Wisconsin, rather than western landscapes; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Lawren, Bill 1992 "Singing the Blues for Songbirds: Bird lovers lament as experts ponder the decline of dozens of forest species" National Wildlife http://www.nwf.org/News-and-Magazines/National-Wildlife/Birds/Archives/1992/Singing-the-Blues-for-Songbirds.aspx "	The author contends that birds will have a place to live as long as large forest tracts in the Appalachians and northern New England remain intact. The paper provided neither has site-specific nor species-specific information relative to the CNNF nor the management of Chequamegon-Nicolet management indicator species or designated threatened, endangered or sensitive bird species.
33. Artley	4	"Lowe, Kimberly Ph.D.,""Restoring Forest Roads."" A Northern Arizona University Ecological Restoration Institute publication Working Paper 12. June, 2005. https://library.eri.nau.edu:8443/bitstream/2019/100/4/Lowe3WorkingPaper2005.pdf"	This paper pertains to restoring unused and abandoned roads. The CNNF Forest Plan has standards and guides for the restoration of abandoned (decommissioned) roads.

33. Artley	4	"Luce, Charles H. Ph.D., 2002. ""Hydrological processes and pathways affected by forest roads: what do we still need to learn?"" Hydrologic Processes: 16, 2901–2904. http://www.fs.fed.us/rm/boise/teams/soils/Publications/Luce%202002%20HP.pdf"	Not applicable to most CNNF projects. Paper discusses road effects in mountainous terrain.
33. Artley	4	"Maholland, Becky and Thomas F. Bullard Ph.D., ""Sediment-Related Road Effects on Stream Channel Networks in an Eastern Sierra Nevada Watershed."" Journal of the Nevada Water Resources Association, Volume 2, Number 2, Fall 2005. http://www.nvwra.org/docs/journal/2005_Fall/NWRAjournal_fall2005_article4.pdf"	Not applicable to most CNNF projects. Paper discusses road effects in mountainous terrain.
33. Artley	4	"Malecki, Ron W. “A New Way to Look at Forest Roads: the Road Hydrologic Impact Rating System (RHIR)” The Road-RIPorter, Autumn Equinox, 2006 http://www.wildlandscpr.org/files/uploads/RIPorter/rr_v11-3.pdf"	Excerpt from an article published in a newsletter by Wildlands CPR (wildlandscpr.org); Ron W Malecki developed the Road Hydrologic Impact Rating (RHIR) system to provide a summary of forest road data and to compare forested ecosystems throughout the intermountain West. Conclusions in the report states, “Assessing all the impacts of roads is difficult, and many of their far-reaching influences are still to be observed, studied, or considered”. The system is designed and based on mountainous regions; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"McCashion, J. D. and R. M. Rice Ph.D. 1983. ""Erosion on logging roads in northwestern California: How much is avoidable?"" Journal of Forestry 8(1): 23-26. http://www.fs.fed.us/psw/rsl/projects/water/McCashion.pdf"	Citation is the abstract from an article in the Journal of Forestry (January 1983). Article describes a study that was confined to roads in mountainous terrain of northwest California; would not be applicable to upper Midwest landscape in northern Wisconsin due to

			differences in landscape characteristics.
33. Artley	4	"McFero III, Grace, J. ""Sediment Plume Development from Forest Roads: How are they related to Filter Strip Recommendations?"" An ASAE/CSAE Meeting Presentation, Paper Number: 045015, August 1-4, 2004. http://www.srs.fs.usda.gov/pubs/ja/ja_grace017.pdf"	The paper is specific to turn-out or lead off ditches and sediment deposition in those ditches on forest roads in Alabama and Georgia. The paper also cites the incorporation of appropriate BMPs for reducing sediment flow and preposition in those ditches. Wisconsin BMPs (developed specifically for Wisconsin) are incorporated into all FS road designs on the CNNF.
33. Artley	4	"McGarigal, Kevin Ph.D., William H. Romme Ph.D. Michele Crist Ph.D.and Ed Roworth Ph.D. “Cumulative effects of roads and logging on landscape structure in the San Juan Mountains, Colorado (USA)” Landscape Ecology, Volume 16, Number 4 / May, 2001 http://www.springerlink.com/content/w12557624742tv77/"	Not applicable to most CNNF projects. Paper discusses road effects in mountainous terrain.
33. Artley	4	"McLellan, Bruce N. “Relationships between Human Industrial Activity and Grizzly Bears” Bears: Their Biology and Management, Vol. 8 International Conference on Bear Research and Management February 1989 (1990), pp. 57-64 http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol_8/McClellan_8.pdf "	Journal paper specifically focuses on human and grizzly bear interactions. There are no grizzly bears located on the CNNF. The paper briefly mentions that black bears, which do occur on the CNNF, have survived the spread of humanity relatively well.
33. Artley	4	"Megahan, Walter F. Ph.D. “Predicting Road Surface Erosion from Forest Roads in Washington State” from a presentation presented at the 2003 Geological Society of America meeting. http://gsa.confex.com/gsa/2003AM/finalprogram/abstract_67686.htm"	Presentation on a GIS model intended for use on forest roads in Washington State; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Montgomery, David Ph.D., Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America’s Forests April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement	This is not a peer reviewed article. The referenced quote supports the Act to Save Americas Forests. This bill did not become law. In part, it proposed to ban clearcutting from Federal lands.

		.htm "	
33. Artley	4	"Noss, Reed F., Ph.D. 1995. “The Ecological Effects of Roads or the Road to Destruction” Wildlands CPR http://www.wildlandscpr.org/ecological-effects-roads"	Article published on Wildlands CPR (wildlandscpr.org). Article covers many topics relative to roads, with the majority of the article discussing high standard high traffic volume roads. Most CNNF roads projects are comprised of low volume roads with low average daily traffic (ADT) levels. Roads equivalent to those discussed in the article are other jurisdictional roads.
33. Artley	4	"Ortega, Yvette K.; Capen, David E. 1999. “Effects of forest roads on habitat quality for Ovenbirds in a forested landscape” Auk. 116(4): 937-946. http://www.fs.fed.us/rm/pubs_other/rmrs_1999_ortega_y001.html"	Citation is the abstract of a study conducted specific to oven birds. Oven bird range and distribution covers the CNNF, but is not a regional forester sensitive species, listed as a species of concern, or a management indicator species.
33. Artley	4	"Reed, R.A., Johnson-Barnard, J., and Baker, W.A. 1996. ""Contribution of Roads to Forest Fragmentation in the Rocky Mountains."" Conservation Biology 10: 1098-1106. http://cpluhna.nau.edu/Research/contribution_of_roads_to_forest_.htm"	"Citation is “adapted” from Reed, R.A., Johnson-Barnard, J., and Baker, W.A. 1996. Contribution of Roads to Forest Fragmentation in the Rocky Mountains.Conservation Biology 10: 1098-1106. The adaptation is printed on the website shown in the e-reference above but does not show an author. The actual reference could not be located in its entirety. "
33. Artley	4	"Reid, L. M. Ph.D. and T. Dunne (1984), “Sediment Production from Forest Road Surfaces,” Water Resour. Res., 20(11), 1753–1761. http://www.agu.org/pubs/crossref/1984/WR020i011p01753.shtml"	Citation is the abstract from a study that is specific to the central Clearwater basin on the western slope of the Olympic Mountains of Washington State; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Reid, Leslie M. Ph.D., Robert R. Ziemer Ph.D., and Michael J. Furniss 1994. ""What do we know about Roads?"" USDA	Paper states that “grew out of discussions at interdisciplinary and interagency workshops held

		Forest Service. http://www.fs.fed.us/psw/publications/reid/4Roads.htm"	at the Humboldt Interagency Watershed Analysis Center in McKinleyville, California on 1 June 1994. Ideas contained herein are strongly influenced by the variety of opinions expressed by the participants". Not a scientific study or report.
33. Artley	4	"Rice, Raymond M. Ph.D., Forest B. Tilley and Patricia A. Datzman. 1979. ""Watershed's Response to Logging and Roads: South Fork of Caspar Creek, California, 1967-1976."" USDA Forest Service, Research Paper PSW-146. http://www.fs.fed.us/psw/publications/rice/Rice79.pdf"	Study site specific to 2 watersheds in northern California in the 1960's and 1970's. Follow up comparisons to the study involved comparative landscapes in Northern California; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Riedel, Mark S. Ph.D. and James M. Vose Ph.D., ""Forest Road Erosion, Sediment Transport and Model Validation in the Southern Appalachians."" Presented at the Second Federal Interagency Hydrologic Modeling Conference, July 28 – August 1, 2002. http://www.srs.fs.usda.gov/pubs/ja/ja_riedel002.pdf"	Study was site specific to the Conasauga River watershed in norther Georgia and southern Tennessee. The study involved 13 mountain roads in the Conasauga watershed; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Rowland, M. M., M. J. Wisdom, B. K. Johnson, and M. A. Penninger 2005. "Effects of Roads on Elk: Implications for Management in Forested Ecosystems." Pages 42-52 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group. http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_rowland001.pdf"	Elk are not currently endemic on the CNNF. There is one elk herd (re-introduced) on the CNNF and this paper may be applicable within the core elk area or other dispersal areas.
33. Artley	4	"Schwartz, Chuck Ph.D. - March 1998 "Wildlife and Roads" The Interagency Forest Ecology Study Team (INFEST)	Newsletter summarizes impacts of roads on brown bear and grizzly bear. Not applicable to

		newsletter http://www.sf.adfg.state.ak.us/sarr/forestecology/fsroads.cfm "	the CNNF. There are no brown or grizzly bears on the CNNF.
33. Artley	4	"Shanley, James B. and BeverleyWemple Ph.D. “Water Quantity and Quality in the Mountain Environment” Vermont Law Review, Vol. 26:717, 2002 http://www.uvm.edu/~bwemple/pubs/shanley_wemple_law.pdf"	Research paper specific to water quality and quantity in mountain streams; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Swift Jr., L. W. ""Soil losses from roadbeds and cut and fill slopes in the Southern Appalachian Mountains."" Southern Journal of Applied Forestry 8: 209-216. 1984. http://cwt33.ecology.uga.edu/publications/403.pdf"	Study conducted on 1 test road at an elevation of 3560 ft in mountainous terrain of the southern Appalachian Mountains of western North Carolina; would not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Switalski, Adam “Where Have All the Songbirds Gone? Roads, Fragmentation, and the Decline of Neotropical Migratory Songbirds” Wildlands CPR, September 8, 2003 http://www.wildlandscpr.org/node/213 "	A well written paper discussing songbird decline. The 2004 CNNF Land and Resource Management Plan, addresses those species relative to upper Midwest landscape in northern Wisconsin.
33. Artley	4	"Trombulak, Stephen C. Ph.D. and Christopher A. Frissell Ph.D. “Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities” Conservation Biology, Volume 14, No. 1, Pages 18–30, February 2000 http://www.transwildalliance.org/resources/200922144524.pdf"	Well presented paper on effects of roads. Paper is not specific to type or standard of roads but takes a generalized approach. Most CNNF road projects relate to low volume low standard roads. The potential impacts of CNNF road projects are analyzed project by project.
33. Artley	4	"Watson, Mark L. ""Habitat Fragmentation and the Effects of Roads on Wildlife and Habitats."" Background and Literature Review 2005. http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/2004EffectsofRoadsonWildlifeandHabitats.pdf"	As reference states, document is a background and literature review. Document composed of bullet statements. 2 out of 6 pages presented in body of review is literature cited. 2 appendices are included in the reviews that are specific to roadless areas.
33.	4	"Wisdom, Michael J., Richard S. Holthausen Ph.D., Barbara	Multi-agency general technical report specific to

Artley		C. Wales Ph.D. Christina D. Hargis Ph.D., Victoria A. Saab Ph.D., Danny C. Lee Ph.D., Wendel J. Hann Ph.D. Terrell D. Rich, Mary M. Rowland, Wally J. Murphy, and Michelle R. Eames ""Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications Volume 2 – Group Level Results."" USDA Forest Service, PNW-GTR-485, May 2000. http://maps.wildrockies.org/ecosystem_defense/Science_Documents/Wisdom_et_al_2000/Vol_2a.pdf"	the Interior Columbia Basin; although some species addressed in the report also have range and distribution covering the CNNF, the 2004 CNNF Land and Resource Management Plan, addresses those species relative to upper Midwest landscape in northern Wisconsin as opposed to the Pacific Northwest.
33. Artley	4	"Wright, Bronwen, Policy Analyst and Attorney Pacific Rivers Council Excerpt from a May 11, 2009 letter to the Rogue River-Siskiyou National Forest Travel Management Team http://www.pacificrivers.org/protection-defense/comment-letters/Rogue%20River%20Siskiyou%20TMP%20DEIS.pdf"	Letter and comments are project specific to a travel management DEIS in Oregon. References attached to citations within the comment letter and provided above, are specific to mountainous regions of the western United States; would likely not be applicable to upper Midwest landscape in northern Wisconsin due to differences in landscape characteristics.
33. Artley	4	"Wuerthner, George 2008 “Ecological Differences between Logging and Wildfire” http://wuerthner.blogspot.com/2008/12/ecological-differences-between-logging.html"	This article discusses the ecological differences between mechanical treatments and wildfire. It is not applicable to most CNNF projects. Most CNNF landscapes were not fire dependent.
33. Artley	4	"Zimmerman, E.A. and P.F. Wilbur “A Forest Divided” New Roxbury Land Trust newsletter, 2004 http://www.ourbetternature.org/forestfrag.htm "	This is an opinion piece, not a scientific article. This non-scientific article discusses forest fragmentation in and the effects on aquatic and terrestrial resources
33. Artley	10	The numerous poll results listed within the attachment.	This attachment lists numerous polls conducted on the public relating to the Forest Service, logging, and public land use. Nearly all are more than 15 years old and were conducted on citizens outside of Wisconsin and the Midwest. Most polls were conducted in the New England area or the Southeastern or Northwestern United States.

			A poll conducted by the Forest Service (Survey Results of the American Public's Values, Objectives, Beliefs, and Attitudes Regarding Forests and Grasslands) in 2002 was listed, the results from this poll are over 15 years old and no longer timely and thus relevant. Only one listed poll was performed in the last decade however, it was conducted on voters in the "Rocky Mountain states" and is not appropriate of the CNNF. The CNNF is in the Upper Midwest, specifically Wisconsin, and has conducted appropriate public outreach to stakeholders and the local community as part of the NEPA process.
33. Artley	10	"BOISE -- Here's a valentine for Idaho's economy: Outdoor recreation creates more than 77,000 jobs, $6.3 billion in consumer spending, $1.8 billion in wages and $461 million in state and local tax revenue, according to a new report from the Outdoor Industry Association released today." "Total news release text at: http://www.idahooutdoorbusinesscouncil.org/news/2013/2/14/outdoor-recreation-in-idaho-supports-77000-jobs-63-billion-i.html "	This news release is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. Additionally, it pertains to the Western United States and is not appropriate or applicable to the Upper Midwestern region where the CNNF resides. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	10	"Washington Dept. of Fish and Game February 10, 2014 news release… Total news release text at… http://wdfw.wa.gov/news/feb1014a/ "	This news release is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. Additionally, it pertains to the Western United States and is not appropriate or applicable to the Upper Midwestern region where the CNNF resides. The referenced document does not provide best

			available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	10	"The Timber Scam by Keith Wright, 6/25/2000 … Link to entire paper: http://www.jacksonprogressive.com/issues/misspolitics/timberscam.html "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	10	"National Forests Support Recreation Economy By Frank Sturges 7/23/2014… Link: http://blog.nwf.org/2014/07/national-forests-support-recreation-economy/ "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	10	"Why Doesn't Uncle Sam Count Outdoor Recreation Jobs? by Tom Kenworthy, Jan 21, 2015… Link: http://thinkprogress.org/climate/2015/01/21/3613721/uncle-sam-count-those-recreation-jobs/ "	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	10	"Logging on Public Land Must be Restricted 123HelpMe.com. 29 Nov 2015… Link: http://www.123helpme.com/view.asp?id=10306"	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33.	10	"If a tree falls in the watershed: Some question logging on	This news release is not a peer-reviewed journal

Artley		land surrounding Northampton's reservoirs Daily Hampshire Gazette, March 14, 2014"	article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. Additionally, it pertains to the Eastern United States and is not appropriate or applicable to the Upper Midwestern region where the CNNF resides. Link was not provided but article was found at: https://www.gazettenet.com/Archives/2014/03/hamplogging-hg-031514
33. Artley	11	"Fact Sheet: Understanding Fire and Fire Behavior Fact sheet provided by the Ecological Restoration Institute, Northern Arizona University, 2003 http://www.emifpa.org/PDF/FactSheetUnderstandingFire.pdf "	CNNF reviewed the provided information. This is a fact sheet with general information on fire behavior and defensible space. The information gives good information for homeowners on the value of creating defensible space but is not applicable to the landscape level practices on the CNNF which is done on public land and not on private land or near homes.
33. Artley	11	"Congressional testimony before the U.S. House of Representatives Natural Resources Committee, Subcommittee on Oversight and Investigations, September 27, 2017 Oversight Hearing "Exploring Solutions to Reduce Risks of Catastrophic Wildfire and Improve Resilience of National Forests" Testimony of Dr. Dominick A. DellaSala, Chief Scientist, Geos Institute, Ashland Oregon https://naturalresources.house.gov/calendar/eventsingle.aspx?EventID=402870"	The link is broken. Further research found a transcript of the proceedings at: https://www.govinfo.gov/content/pkg/CHRG-115hhrg27027/html/CHRG-115hhrg27027.htm The testimony mainly pertains to fire suppression and the WUI. The referenced testimony while interesting is not pertinent to the CNNF proposed actions. The commenter fails to make specific connection to the CNNF and/or Fourmile project.
33. Artley	11	"Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States By Elizabeth D. Reinhardt, Dr. Robert E. Keane, David E. Calkin, and Dr. Jack D. Cohen (all USFS research scientists) Published in Forest Ecology And Management, 2008	This document was not used in the project analysis. It discusses long term fuel planning to create conditions in which fire can occur without devastating consequences. It also identifies the Federal agency dilemma that the home ignition

		https://www.fs.fed.us/rm/pubs_other/rmrs_2008_reinhardt_e001.pdf"	zone largely occurs on private lands and most land management agencies do not have the authority to mitigate the WUI ignition potential directly, so are forced to take indirect routes.
33. Artley	11	"Wildland-Urban Fire—A different approach By Dr. Jack Cohen Published by Biomass Monitor, September 20, 2013 https://thebiomassmonitor.org/2013/09/20/wildland-urban-fire-a-different-approach/"	Link is broken.
33. Artley	11	"Everything you wanted to know about wildland forest fires but were afraid to ask Published by the Wild Nature Institute, April 9, 2018 https://phys.org/news/2018-04-wildland-forest.html"	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document, focused on the Western United States, does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	"Reducing the Wildland Fire Threat to Homes: Where and How Much? By Dr. Jack Cohen Presented as the Fire Economics Symposium in San Diego, California on April 12, 1999. http://www.fs.fed.us/rm/pubs_other/rmrs_1999_cohen_j001.pdf"	CNNF reviewed. The information, from 1999, provides analysis on how ignition occurs relating to home fire losses from wildland fires. The CNNF will follow Forest Service Handbook standards when fuel/fire activities are proposed. Additional information can be found in the Fuels Report of the project record.
33. Artley	11	"Structure Ignition Assessment can Help Reduce Fire Damages in the WUI By Dr. Jack Cohen Published in Fire Management Notes, Volume 57 No. 4, 1997 http://www.fs.fed.us/rm/pubs_other/rmrs_1997_cohen_j001.pdf"	This article focuses on structure home loss in the instance of wildland fire. The Forest Service performs activities on Forest Service land and not private land where homes are found.
33.	11	'Examination of the Home Destruction in Los Alamos	Discusses how suppressing wildfire among

Artley		Associated with the Cerro Grande Fire July 10, 2000 By Dr. Jack Cohen Source: USDA Forest Service, Rocky Mountain Research Station, Missoula, Montana, 2000. http://www.fusee.org/docs/Preparedness/Cohen_examlosalamos%20copy.pdf"	numerous highly flammable houses was too much for typical wildland firefighter personnel to handle. This article while informational, does not lend relevant information to the proposed Fourmile activity of the CNNF. Additionally, link is broken but article was found after search at: https://www.fs.fed.us/rm/pubs_other/rmrs_2000_cohen_j001.pdf
33. Artley	11	"Commercial Logging Causes Forest Fires By Glen Barry, Ph.D. President Forests.org, Inc. Published in FOREST CONSERVATION NEWS TODAY, July 20, 2002 http://wgbis.ces.iisc.ernet.in/envis/doc1999ahtml/biodcomi220928.html"	This opinion-based article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	'Saving Homes from Wildfires: Regulating the Home Ignition Zone By Jack Cohen, Nan Johnson, and Lincoln Walther, AICP Published in Zoning News, May 2001 http://idahofirewise.org/assets/library/Fire%20Code/Idaho%20Codes%20and%20Ordinances/zoning%20news%20cohen.pdf"	This article focuses on structure home loss in the instance of wildland fire. The article gives good information for homeowners on the value of creating defensible space but is not applicable to the landscape level practices on the CNNF which is done on public land and not on private land where homes are found.
33. Artley	11	"COMMERCIAL LOGGING CAUSED WILDFIRES:… Published by Portland Independent Media Center, August 23, 2002 http://portland.indymedia.org/en/2002/08/17464.shtml"	This opinion-based article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.

33. Artley	11	"What is the wildland fire threat to homes? By Dr. Jack Cohen Thompson Memorial Lecture, School of Forestry, Northern Arizona University, Flagstaff, AZ, 10 April 2000. 13 p. http://idahofirewise.org/assets/library/Science%20of%20Fire/Scientific%20Findings/wildland%20fire%20threat%20cohen.PDF"	Presentation given at Northern Arizona University in 2000. No new information or data were gained from this article that required further analysis by the CNNF.
33. Artley	11	"Logging Impacts Published by Sierra Forest Legacy, 2012 https://www.sierraforestlegacy.org/FC_FireForestEcology/FFE_LoggingImpacts.php"	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	"Modeling Potential Structure Ignitions from Flame Radiation Exposure with Implications for Wildland/Urban Interface Fire Management By Dr. Jack Cohen and Bret W. Butler Presented at the 13th Fire and Forest Meteorology Conference. Lorne, Australia, 1996 https://www.fs.fed.us/rm/pubs_other/rmrs_1998_cohen_j001.pdf"	This article addresses modeling tools on ignition from flame radiation exposure. It makes recommendations on thinning vegetation within 40 meters of a residential building to create a "defensive space" and reduce chances of fire loss from wildland fires. This information would be beneficial for the general public but not appropriate for the CNNF as the CNNF cannot act on private land nor does the CNNF propose to.
33. Artley	11	"Preventing Disaster Home ignitability in the Wildland-Urban Interface By Dr. Jack Cohen Published in the Journal of Forestry, March 2000 https://www.fs.fed.us/rm/pubs_other/rmrs_2000_cohen_j002.pdf"	This article focuses on structure home loss in the instance of wildland fire. This information would be beneficial for the general public but not appropriate for the CNNF as the CNNF cannot act on private land nor does the CNNF propose to.
33.	11	"Fourmile Canyon Fire Findings	This report pertains to a specific fire that

Artley		By Dr. Russell Graham, Dr. Mark Finney, Chuck McHugh, Dr. Jack Cohen, Dave Calkin, Rick Stratton, Larry Bradshaw, and Dr. Ned Nikolov (all are USFS employees who work in fire research) Published in USDA Forest Service Gen. Tech. Rep. RMRS-GTR-289. 2012 https://www.fs.fed.us/rm/pubs/rmrs_gtr289.pdf"	occurred in 2010 in a mountainous area in Colorado and is not applicable to the CNNF which is in a non-mountainous area of the Upper Midwest in Wisconsin. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	"Why homes are lost to wildfire By Melissa Mylchreest Published in High Country News, April 4, 2014 https://www.hcn.org/articles/the-loss-of-homes-to-wildfire-is-as-much-a-sociopolitical-problem-as-it-is-a-physical"	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	"The Wildland-Urban Interface Fire Problem: A Consequence of the Fire Exclusion Paradigm By Dr. Jack Cohen Published in Forest History Today, Fall 2008 https://foresthistory.org/wp-content/uploads/2017/01/Cohen.pdf"	Discusses change in fire management policy and the relationships between wildfires and the causal linkage to WUI fire disasters which is beyond the purpose of the CNNF proposed action for the Fourmile project.
33. Artley	11	"The Big Lie: Logging and Forest Fires By Dr. Chad Hanson http://yeoldeconsciousnessshoppe.com/art6.html"	An opinion-based article which is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	"How risk management can prevent future wildfire disasters in the wildland-urban interface	A peer-reviewed article on the 2010 Fourmile Canyon fire in Colorado. While informative, this

		By: David E. Calkin (USFS research forester), Dr. Jack D. Cohen, Dr. Mark A. Finney {USFS research forester), and Dr. Matthew P. Thompson {USFS research forester) Published in the Proceedings of the National Academy of Sciences, January 14, 2014 http://www.pnas.org/content/111/2/746.full "	research on a specific event that occurred in the mountains in the Western United States is not appropriate to apply to the non-mountainous CNNF which is in Wisconsin in the Upper Midwest.
33. Artley	11	"Wildfire Protection in the Wildland-Urban Interface Congressional Research Service Report, January 30, 2014 https://www.everycrsreport.com/reports/RS21880.html"	This article, summarizing a report by the Congressional Research Service, reviews "Wildfire Protection in the Wildland-Urban Interface". The article makes several recommendations to the reader on Forest Service and Congressional actions relating to the Wildland-Urban Interface, however changes in Forest Service policy and Congressional actions are beyond the scope of the Fourmile project.
33. Artley	11	"Source of best science quotes below: Thoughts on the Wildland-Urban Interface Fire Problem, June 2003 By Dr. Jack Cohen http://northernrockiesfire.org/links/cohen.htm"	A letter by Dr. Cohen which discusses the dilemma of suppressing all fires. The letter is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	11	"Testimony to the Agriculture, Nutrition and Forestry Committee United State Senate. Hearing to Review Healthy Forests Restoration Act, HR 1904 on June 26, 2003 By: Arthur Partridge Ph.D., Professor Emeritus, University of Idaho http://www.saveamericasforests.org/congress/Fire/PartridgeSenate03.htm"	This testimony pertains to the "…Correct Way to Protect Buildings From Fire Damage…" (p. 1) and is part of a hearing review on the Healthy Forests Restoration Act, HR 1904 (HFRA). This CNNF project does not fall under the HFRA and the article is therefore not applicable to the proposed action.
33. Artley	11	"Fires necessary to sustain ecological integrity By Richard Hutto, professor emeritus of biology and wildlife biology with the Division of Biological Sciences at the University of Montana	An opinion-based article which is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The

		Published in the Missoulian newspaper, August 16, 2017 http://missoulian.com/opinion/columnists/fires-necessary-to-sustain-ecological-integrity/article_648a3bf0-dfc7-51e9-984c-ebf66f9f36c4.html"	referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	"Source of best science quotes below: Fuel reductions ineffective; mandate fire-wise protections By George Wuerthner, forest ecologist and author Published in the Missoulian newspaper, September 5, 2017 http://missoulian.com/opinion/columnists/fuel-reductions-ineffective-mandate-fire-wise-protections/article_64841590-c42e-5fd0-80ae-b8a025f94bbe.html"	An opinion-based article which is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	11	"Nearly all Forest Service projects that claim to lessen the risks to homeowners living in the WUI propose to commercially remove hazardous fuels. Without exception the NEPA documents that analyze these fuels reduction treatments conveniently do not mention Dr. Cohen's methods because the Purpose & Need is to "reduce fuels" and not reduce the fire damage risk to structures in the WUI as it should be. Reducing hazardous fuels might be an alternative way to lessen the risks to homeowners living in the WUI. It definitely should not be a goal or objective unto itself and should never appear in the Purpose & Need. Which is more important – human lives or fuels?"	The CNNF follows all Forest Service Handbook standards when designing and proposing actions, including fuel treatments. The CNNF only proposed actions on the public forest land and not on private lands where the CNNF has no jurisdiction; the research referenced (Cohen) is applicable to private lands and houses which the CNNF is not. The proposed action has analyzed impacts, including fuels, which can be found in the project record.
33. Artley	14	"Bartels, Ronald, John D. Dell, Richard L. Knight Ph.D. and Gail Schaefer "Dead and Down Woody Material" Animal Inn http://www.fs.fed.us/r6/nr/wildlife/animalinn/hab_8ddwm.htm "	Weblink goes to PNW homepage. Article couldn't be found.
33. Artley	14	"Byron, Eve "Wuerthner to speak on forest ecology and value of dead trees" Published in the Helena Independent Record,	Website found; publication no longer available from that source.

		November 17, 2009 http://www.helenair.com/news/local/article_7cac58d2-d339-11de-abfc-001cc4c002e0.html "	
33. Artley	14	"“Dead Trees are Good Homes” Parks Canada, 2009 http://www.pc.gc.ca/eng/docs/v-g/dpp-mpb/sec1/dpp-mpb1b.aspx "	Link to a page on the Canada Parks website about the value of dead trees to wildlife and the importance of having a variety of young, old and dead trees in a forest ecosystem. The relationship between producers, consumers and decomposers is often depicted as a “food web”. A healthy forest has many food webs, including important webs created by dead trees. Specific examples of birds, animals, and plants that benefit from dead trees was included.
33. Artley	14	"Kreil, Randy “Bare Trees” North Dakota Outdoors, March 1994 http://www.und.nodak.edu/org/ndwild/oldtree.html "	This article appeared in the March 1994 edition of North Dakota Outdoors magazine. The author contrasts the human trait of organization and order to nature's need for disorder, with the value of dead and dying trees for wildlife habitat as the focal point of the article. It included statistics and examples regarding the number of North American cavity nesting bird species and mammals that also use holes in trees for burrows and rearing of young.
33. Artley	14	"Miller, Edward W. “Savage or Salvage Logging?” The Coastal Post - September, 1998 http://www.coastalpost.com/98/9/13.htm "	This was an opinion article published in the September 1998 edition of The Coastal Post newsletter. The author explains why he believes the planned removal of 650 "exotic" pines on 15 acres in his community may prove detrimental to the ecology of the watershed through the loss of soil nutrients and structural support provided by the decaying trees and their root systems.
33.	14	"Maser, Chris Ralph G. Anderson, Kermit Cromack, Jr. Ph.D.	Weblink goes to PNW homepage. Article

Artley		Jerry T. Williams and Robert E. Martin, Ph.D. “Dead and Down Woody Material” From Wildlife Habitats in Managed Forests the Blue Mountains of Oregon and Washington http://www.fs.fed.us/r6/nr/wildlife/animalinn/hab_6ddwm.htm "	couldn't be found. Further search needed.
33. Artley	14	"Naylor, Brian, Ph.D. “Cavity Trees – Nature’s Refuge” The Ontario Woodlot Association Newsletter, Winter / Spring 2006, Vol. 42 http://www.ontariowoodlot.com/pages_pdf_new/cavitytree_S&W.pdf "	This description of cavity trees published in the Winter/Spring 2006 edition of "The Ontario Woodlot Association Newsletter" was authored by a Forest Habitat Biologist with the Ontario Ministry of Natural Resources (OMNR). The article describes the different types of cavities provided by trees and how they are utilized by various wildlife and bird species. The article includes some guidelines the OMNR uses for the retention of cavity trees when managing their forests.
33. Artley	14	"“Removal of dead wood and dead trees was listed as a KEY THREATENING PROCESS” Schedule 3 of the Threatened Species Conservation Act 1995 [12 December 2003]. http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/threat_profile.aspx?id=20011 "	Australian website; information about Schedule 3 not couldn't be found.
33. Artley	14	"Santiago, Melissa J. and Amanda D. Rodewald, Ph.D. “Dead Trees as Resources for Forest Wildlife” Ohio State University Extension Fact Sheet http://ohioline.osu.edu/w-fact/0018.html "	This was an undated fact sheet put out by the Ohio State University Extension, School of Natural Resources. References cited were from 1990, 1995, and 1996. It describes the role of snags, dead limbs, and logs for wildlife habitat and nutrient cycling, providing examples of how various species use dead trees as well as factors that should be considered when making decisions about dead wood retention.
33. Artley	14	"Schneider, Gary, “Dead Trees (they’re still full of life)” The Macphail Woods Ecological Forestry Project, December 2008	Unable to open link. Article could not be found.

		http://www.macphailwoods.org/wildlife/deadtrees.html "	
33. Artley	14	"Science Findings, issue twenty, November 1999 Pacific Northwest Research Station USDA Forest Service http://www.fs.fed.us/pnw/sciencef/scifi20.pdf "	"This article was in the Nov. 1999 edition of the USDA Pacific Northwest Research Station publication ""Science Findings"". It is an update to a 1979 research report on the value of snags and dead wood structures as foraging, denning, nesting, and roosting habitat. A key point shared in this update was that meeting quotas for snags and logs won't ensure sustainability; rather there is a need to differentiate among the types of dead components to best serve the wildlife and other forest functions most effectively. "
33. Artley	19	Bandy, LeRoy Ph.D and Bandy, Barbara M.S.2004, "The Case Against Intensive Forest Management in Maine" http://www.forestecologynetwork.org/BANDY22.htm	The referenced document is focused on timber practices in Maine. This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. Additionally, the article is focused on Maine in the New England area and is not appropriate to apply to the CNNF in the Upper Midwest.
33. Artley	19	Barnbaum, Bruce Ph.D., "Understanding Forests and Protecting Timber Jobs" The paper was written in 1992, and updated in 1998 and 2001. The link to this paper no longer works	No link was provided, the article could not be found. However, economic and recreation analysis were done for the Fourmile proposed action and found no significant effects, further information can be found in the project record.
33. Artley	19	"What Is Clearcutting? This method of logging can destroy an area's ecological integrity." An NRDC publication, May 2000 http://ssfourthgrade.wikispaces.com/file/view/What+Is+Clear cutting.pdf	Unable to access article – Potential impacts from the proposed project have been analyzed in chapter 3 of the EA.
33. Artley	19	All statements above are from a Press Conference with Senator Robert Torricelli, April 28, 1998, U.S. Capitol	The referenced document includes statements from scientists to Congress requesting passage of

		http://www.saveamericasforests.org/news/ScientistsStatement.htm	a bill, Act to Save America's Forests (S. 977 and HR 1376). This is an opinion piece on broad policies and not applicable at the Forest or project level. The article does not provide specific information related to the Fourmile project; nor does the commenter demonstrate a specific connection to this project. Potential impacts from the proposed project have been analyzed in chapter 3 of the EA
33. Artley	19	McMahon, Mary, Harris, Bronwyn "Why is Clearcutting bad for the Environment?" From wise GEEK, 2014 http://www.wisegeek.org/why-is-clearcutting-bad-for-the-environment.htm	The referenced document appears to be a blog and is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF
33. Artley	19	Schafer, Maggie, Molvar, Erik, "Clearcutting: An Idea Whose Time has Passed Published by Biodiversity Conservation Alliance, 2006 The link to this paper no longer works	No link was provided, the article could not be found.
33. Artley	19	Miller, Chris, "Natural resources strategy calls for 50% reduction in clearcutting in 5 years" Mr. Miller is a National Conservation Biologist Canadian Parks and Wilderness Society, 2011 http://cpawsns.org/news/natural-resources-strategy-calls-for-50-reduction-in-clearcutting-in-5-year	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Clearcut Landslides in Douglas County An Umpqua Watershed publication, 1996 The link to this paper no longer works	No link was provided, the article could not be found.
33. Artley	19	Dahlgren, R.A. Ph.D., Driscoll, C.T. Ph.D., "The effects of whole-tree clear-cutting on soil processes at the Hubbard Brook Experimental Forest, New Hampshire, USA"	The referenced document explores the effects of whole-tree clearcutting on soil processes and stream water chemistry in a northern hardwood

		Published in Plant and Soil, January 1994, Volume 158, Issue 2, pp 239-262 http://link.springer.com/article/10.1007%2FBF00009499	forest at the Hubbard Brook Experimental Forest, New Hampshire. The analysis of the effects on soils and water quality from the modified proposed action is available in the project record.
33. Artley	19	Steelman Toddi, Ph.D. "The Monongahela Controversy and Decision" An SAF publication, 2010 https://sites.google.com/site/forestryencyclopedia/Home/The%20Monongahela%20Controversy	The referenced document is from a website called forestry encyclopedia about the history of the Monongahela Controversy and Decision where even-aged management, clearcutting, was the primary forest management tool used on the Monongahela National Forest in 1975. Even-aged management is not the primary management tool on the CNNF, nor on this project. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	"Clearcutting Opposing View- "Clearcutting can destroy an area's ecological integrity in a number of ways… An NRDC publication…The link to this paper no longer works"	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	A Wikipedia definition of clearcutting Wikipedia is a trusted source for accurate information https://en.wikipedia.org/wiki/Clearcutting	Wikipedia is not a peer-reviewed journal and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF.
33. Artley	19	Study: Forest Clearcuts Show Sustained Losses of Carbon, Surprising Trends in Water" By: Clarisse Hart, Harvard Forest Outreach Manager, and Jane Salerno, Clark University Media Relations	The referenced document is a press release about a study conducted by Clark University Professor Christopher Williams and colleagues in a 20-acre clearcut in Petersham, Massachusetts.

		http://harvardforest.fas.harvard.edu/sites/harvardforest.fas.harvard.edu/files/Harvard%20Forest%20press%20release%20for%20101813_Williams%20et%20al.pdf	The paper publishing the results was titled "Post-clearcut dynamics of carbon, water and energy exchanges in a mid-latitude temperate, deciduous broadleaf forest environment." The study observed rapid recovery of a clearcut broadleaf deciduous forest with sustained increases in gross ecosystem productivity over the first three growing seasons post-clearing, coincident with large and relatively stable net emission of carbon dioxide because of overwhelmingly large ecosystem respiration. The commenter does not demonstrate a specific connection to the Fourmile project. Potential impacts from the proposed project, have been analyzed in chapter 3 of the EA.
33. Artley	19	The Destruction of America's Last Wild Forests A Save America's Forests publication, 1998 http://www.saveamericasforests.org/resources/Destruction.htm	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Effects of Clear Cutting By Megan Stubblefield Published by Green Living http://greenliving.lovetoknow.com/environmental-issues/effects-clear-cutting	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific

			connection to this project.
33. Artley	19	Clear-cutting destabilizes carbon in forest soils, study finds Published by Phys.org, April 15, 2016 https://phys.org/news/2016-04-clear-cutting-destabilizes-carbon-forest-soils.html	The news article references a peer-reviewed journal article from *Soil Science*. The scientific article can be found at https://journals.lww.com/soilsci/fulltext/2016/05000/Evidence_for_Losses_From_Strongly_Bound_SOM_Pools.2.aspx The article details a carbon experiment in a New England northern hardwood forest in New Hampshire. The commenter fails to provide justification on how a New Hampshire small scale study applies to the Midwestern CNNF forest located in upper Wisconsin.
33. Artley	19	Clearcutting in Oregon http://www.clearcutoregon.com/private-land.html	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. Additionally, it pertains to Oregon in the Western United States and is not appropriate to the CNNF which is in the Upper Midwest. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Clearcut leaves 'big, ugly, bald spot' across from Wentworth ski hill Aired by CBC Canada http://www.cbc.ca/news/canada/nova-scotia/clear-cut-cutting-wentworth-valley-northern-pulp-forestry-1.4171384	The referenced document is an opinion piece about the visual impacts of a clearcut in Canada. It does not provide best available science or specific information related to the Fourmile project, nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	CLEARCUTTING AND CLIMATE CHANGE Published by the Center for Biological Diversity	The referenced document is an opinion piece about clearcutting and climate change. It does not

		http://www.biologicaldiversity.org/programs/public_lands/forests/clearcutting_and_climate_change/	provide best available science or specific information related to the Fourmile project, nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Canada's Boreal Clearcutting Is a Climate Threat By Joshua Axelrod, Policy Analyst, Canada Project, International program, November 1n 2017 https://www.nrdc.org/experts/josh-axelrod/canadas-boreal-clearcutting-climate-threat	The referenced document is a blog that discusses the impacts of cutting boreal forest in Canada. It references a 2017 Natural Resources Defense Council Report about boreal forests. It does not provide specific information related to the Fourmile project, nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Clearcut Logging Deminishes Shawnigan Lake Watershed (sic) Published by the Watershed Sentinel, August 22, 2012 by Mary Desmond https://watershedsentinel.ca/articles/clearcut-logging-deminishes-shawnigan-lake-watershed/	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Clearcutting: Destroying America's Public Forests Published by Save America's Forests Fund http://www.saveamericasforests.org/pages/educationcda.htm	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	The environmental effects of a clearcut Published by CSERC http://www.cserc.org/local-issues/forests/clearcuts-and-logging-issues/	The referenced document is an opinion piece from the Central Sierra Environmental Resource Center discussing private logging practices in the Sierra

			Nevada Mountains of California. It does not provide best available science or specific information related to the Fourmile project, nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	"Timberspeak" – Logging Spin and Propaganda Published by Massachusetts Forest Watch http://www.maforests.org/Timberspeak-Timber_Industry_Propaganda.pdf	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Negative Effects of Clear-Cutting By Phil Whitmer Published on Sciencing, April 25, 2017 https://sciencing.com/negative-effects-clearcutting-8194063.html	The referenced document is an opinion piece from a website called Sciencing. It does not provide best available science or specific information related to the Fourmile, nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Ontario's biologists called clear-cut logging plan 'big step backwards' Published by the Toronto Star newspaper, January 17, 2015 https://www.thestar.com/news/canada/2015/01/17/provinces-biologists-called-clear-cut-logging-plan-big-step-backwards.html	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	NRDC Natural Resources Defense Council : Clearcutting in Canada's Boreal Forest Unleashes Unreported Carbon Dioxide Emissions, Worsening Climate Change Published by 4-Traders, November 1, 2017 http://www.4-traders.com/news/NRDC-Natural-Resources-	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science

		Defense-Council-Clearcutting-in-Canada-rsquo-s-Boreal-Forest-Unleashes-Unre--25415046/	or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Clearcutting is putting tourism at risk says President of Nova Scotia Tourism Industry Association Published by Nova Scotia Forest Notes, September 22, 2017 http://nsforestnotes.ca/2017/09/22/clearcutting-is-putting-tourism-at-risk-says-president-of-nova-scotia-tourism-industry-association/	The referenced document is an opinion piece published in the Nova Scotia Forest Notes about impacts of clearcutting on tourism. It does not provide best available science or specific information related to the Fourmile project, nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Clearcutting: Destroying America's Public Forests Save America's Forests Fund—Citizens Action Guide, http://www.saveamericasforests.org/pages/educationcda.htm	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	Conservation groups sue Forest Service over secret clearcut on Beaverhead-Deerlodge National Forest Alliance for the Wild Rockies, March 11, 2016 https://allianceforthewildrockies.org/conservation-groups-sue-forest-service-over-secret-clearcut-on-beaverhead-deerlodge-national-forest/	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	19	US Forest Service Moves to Start Clearcutting in Rim Fire Area --- Massive logging proposal threatens many spotted owls, currently thriving in the fire-affected acres of Stanislaus National Forest Earth Island Journal, August 28, 2014 http://earthisland.org/journal/index.php/elist/eListRead/us_for	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor

		est_service_moves_to_start_clearcutting_in_rim_fire_area/	does the commenter demonstrate a specific connection to this project.
33. Artley	19	The Debate Over Clearcutting ThoughtCo., June 4, 2017 https://www.thoughtco.com/clearcutting-the-debate-over-clearcutting-1343027	This article is not a peer-reviewed journal article and, therefore, does not lend new scientific information or data for review that requires further analysis by the CNNF. The referenced document does not provide best available science or specific information related to the project; nor does the commenter demonstrate a specific connection to this project.
33. Artley	27	Photos showing post-harvest conditions of U.S. Forest Service timber sales with the word "restoration" in the sale name	The photos in the document show different clear cut and logged landscapes; no geographical information was given though it appears to be pictures from mountainous areas. The CNNF is not a mountainous area and will have forestry practices appropriate for the CNNF landscape. The CNNF intends to follow the standards detailed in the Forest Service Handbook for proper management of Forest Service land. The attachment does not provide best available science or specific information related to the Fourmile project, nor does the commenter demonstrate a specific connection to this project.